THE JOURNAL

OF THE

Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

Vol. XXVIII MARCH, 1929 No. 3

CONTENTS

	Page
The Diebetic Treatment of Diabetes Mellitus—A Restatement of the Fundamental Principles. L. H. Newburgh, M. D.	211
Standardization of Insulin to Ten Unit, Fifty Unit and One Hundred Unit Strengths. Charles L. Hess, M. S., M. D.	214
The Importance of Early Diagnosis of Diabetes. Henry J. John, M. D.	217
The Shrine at Lourdes. Henry R. Carstens, M. D.	227
Rabies—Symposium:	
Clinical Aspects. W. M. Donald, M. D.	230
Its Etiology, Pathogenesis and Pathological Anatomy. A. L. Amolsch, M. D.	235
A Note on the Methods of Production of the Various Types of Antirabic Vaccines. A. S. Schlingman, D. V. M., M. S.	237
The Veterinary's View. B. J. Killham	239
A Study of 278 Cases of General Paresis Treated with Malaria, at Eloise Hospital, Eloise, Michigan. Joseph E. Bennett, M. D., I. L. Polozker, M. D., Ira M. Altshuler, M. D.	241
Hygiene of the Mind. Thomas J. Heldt, M. D.	245
Some Activities of the Medical Department of the Michigan Tuberculosis Association for 1928. E. R. Vander Slice, M. D.	249
Report of a Case of Interstitial Pregnancy Operated Upon Before Rupture. Charles E. Dutchess, M. D.	251
Love of Surgery. (A Story). Joseph Liburt, M. D.	253
Cavernous Sinus Thrombosis. Report of Case with Recovery. B. F. Glowacki, M. D.	254
Michigan's Department of Health. Guy L. Kiefer, M. D.	256
EDITORIALS—	
Post-Graduate Program	260
A Causative Factor in Diabetes Mellitus	260
Co-ordinating Medical Research	261
Scarcity of Psychiatrists	261
Penny-in-the-Slot-Diagnosis	262
Rabies	262
Beaumont Lectures	262
Sayings of a Septuagenarian	263
Editorial Notes and Current Opinion	263
News and Announcements	265
Deaths—Doctors George S. Ney and Henry Bishop Lauden	265
Communications	266
County Society News	268
The Doctor's Library	280

THE DIETETIC TREATMENT OF DIABETES MELLITUS—A RESTATEMENT OF THE FUNDAMENTAL PRINCIPLES*†

L. H. NEWBURGH, M. D.

ANN ARBOR, MICHIGAN

As long ago as 1914, F. M. Allen had demonstrated that the principle of undernutrition was vastly more successful in the reduction of diabetic hyperglycemia and glycosuria than the older methods in use at that time. Joslin enthusiastically adopted this principle and made it the central feature in the routine treatment of his diabetic patients. Both men emphasized the value of a sharp reduction of calories, but paid little attention to the source of the energy of the diet, with the exception that they permitted only minimal amounts of fat. Joslin felt it necessary to keep the fat as low as possible as a safeguard against acidosis and Allen in one of his publications stated that "fat is a poison for the diabetic."

In order to appreciate the great value of low calory diets it is necessary to recall to mind the composition of the diets in general use during the preceding era. From time immemorial it has been good practice to build up the body of the sick individual, and no exception was made in the case of the diabetic. In fact it was considered essential to add large increments to the weight of these patients, in order to counteract the emaciation so characteristic of that disease. In the second place every attempt was made to avoid carbohydrate. A typical diet of those days consisted of 200 grams of protein; 200 grams of fat, and a small amount of carbohydrate. The patient received some 2,700 calories and very frequently continued to have a glycosuria. The therapeutic failure was attributed by Allen to excess of calories, but another and simpler explanation was brought to light by estimating the glucose value of the diet by Woodyatt's method. When this is done

* From the Department of Internal Medicine, Medical School, University of Michigan.

† Presented to the Michigan State Medical Society at its annual meeting in Detroit, September 28.

it is found that the sort of diet just described contains 150 grams, or more, of available glucose. Need we be surprised that all but the mildest diabetics continued to excrete sugar in the urine while living on such a diet.

If now the type of diet used by Allen and Joslin be analyzed in the same way, its great advantage is easily understood. Such a diet might have the following composition: Protein 50 grams; Fat 30 grams; Carbohydrate 50 grams; with a glucose value of only 80 grams. Most diabetics are able to dispose of that amount of glucose.

But such a diet is intentionally deficient in calories. The prolonged and progressive undernutrition, with the accompanying incapacity caused by it, was accepted by its advocates as an unavoidable evil which was to be regarded as a welcome substitute for the distressing symptoms suffered by the uncontrolled diabetic.

In 1918 Marsh and I began an experiment designed to answer the question whether a middle course between these two extremes was not better than either of them. Our plan was to use a diet containing sufficient energy to maintain the individual following his usual occupation at a little less than the standard weight for his sex and age. In order to supply the two thousand to twenty-five hundred calories ordinarily required for low maintenance, and at the same time keep the glucose value of the diet low, it was necessary to use fat as the chief source of energy and to restrict the protein and carbohydrate because of their high glucose equivalents, as much as the principles of nutrition permitted. We had chiefly in mind that the diet should contain enough protein to establish nitrogen balance but no more, and that the total glucose of the diet must be great enough to insure complete combustion of the fat. Ladd and Palmer who determined the carbohydrate fat ratios when acetone bodies first appeared in the urine of diabetics, found that ketonuria did not occur until the fat of the diet was more than three times the glucose (calculated by adding 58 per cent of the protein to the carbohydrate).

A typical discharge diet used by us has the following composition: Protein 50, Fat 220, Carbohydrate 35. It has a glucose value* of 86 grams; a fatty acid†, glucose ratio of 2.6 and yields 2,300 calories. In practice the patients were first desugarized by a diet of this type but much restricted in regard to energy. For this purpose we fed 15 grams of protein, 90 grams of fat and 12 grams of carbohydrate. The energy value is 960 calories. When the urine had been free of sugar for several days, proportionate increments were added to the diet until the desired maintenance level was reached or glycosuria reappeared. In the latter case the patient finally received a diet as near to his energy requirement as he could tolerate without glycosuria.

This procedure was used in the treatment of 190 consecutive, unselected cases. We then summarized our experience in the following terms: "a low protein, low carbohydrate, high fat diet produces and maintains an aglycosuric state, is not attended by acidosis and causes its disappearance when present (short of coma) at the beginning of treatment; maintains nitrogen balance; does not produce lipemia and causes its disappearance when present at entrance; supplies sufficient energy to avoid the evils of fasting and undernutrition and is not attended by downward progress in uncomplicated cases." This statement was published in 1923. The continued employment of the plan has merely strengthened our confidence in it.

It need scarcely be added that the administration of insulin, increases the responsibility of adhering strictly to proper dietetic principles. Everyone recognizes the life-saving quality of insulin in the treatment of diabetic coma. On the other hand, in the routine treatment of the controlled diabetic it should only be used to aid the patient in obtaining sufficient energy for maintenance when a diet containing his caloric requirement causes glycosuria. This conclusion is based on the conviction that insulin increases quantitatively the total amount of internal secretion but is in no sense curative. If the physician will employ the kind of diet described above he will find that four-fifths of his adult patients do not need insulin. In the case of children, because of their much greater caloric requirement, insulin is necessary to promote normal growth in most of these patients. During the past year we prescribed diets for 347 diabetic patients. Two hundred and fifty six of them, or 74 per cent were able to take a maintenance diet of 2200 calories or more, without insulin. The total glucose of the diet was at least 90 grams.

It needs to be emphasized that the low protein, low carbohydrate, high fat, maintenance diet, is the inevitable result of the application of the laws of nutrition to the

* Total glucose = 100% of the carbohydrate + 58% of the protein + 10% of the fat.
† Fatty acid = 90% of the fat + 46% of the protein.

XUM

specific metabolic problem of the diabetic. With this simple fact in mind, we can not avoid regarding Joslin's[1] recent adverse criticism of this dietetic procedure as an unjustifiable interference with a method that is working well. He finds that 47 per cent of his 609 diabetic deaths since the introduction of insulin were due to disease of the arteries (we refrain from questioning how many of these diagnoses were confirmed by autopsy, and how much this incidence of arterial disease exceeds that of a similar age group from the general population).

According to Joslin the prevention of arteriosclerosis is favored by reduction of weight to the normal level. Advice that we heartily accept. But we are incapable of finding any sound basis for the statements that "The avoidance of a high fat, low carbohydrate diet is another preventive influence. I suspect that the development of arteriosclerosis in our diabetics has been caused largely because the carbohydrate in the diet was lowered and the fat increased out of all proportion. Prior to weighed diets this resulted in coma but with undernutrition and insulin, patients avoid coma and live long enough to show the more subtle effect of the high fat diet, namely atheromatosis." To support these sweeping statements Joslin refers to the record of a patient reported by a colleague. This mild diabetic who died at the age of 58 had lived on a diet "low in carbohydrate with an excess of fat." During the last five years of his life his weight rose from 97½ pounds to 174 pounds. The autopsy disclosed severe vascular disease throughout the body. Can Joslin, who has taught all of us the importance of keeping down the body weight of the diabetic, seriously expect us to believe that this patient who gained 76½ pounds in five years became arteriosclerotic because the fat in his diet irritated his blood vessels. Would the great advocate of undernutrition have us forget that the glaring fault in this patient's diet was its excess of calories?

It is unfortunate that Joslin's paper does not contain a tabulation of the level of blood fats of patients alleged to be harmed by an excess of fat in the diet; for it is well known that the untreated or improperly treated diabetic often shows a marked lipemia; and all agree that its decline is excellent evidence that a proper diet has been prescribed.

Some years ago Marsh[2] and Waller showed that diabetic lipemia was rapidly reduced by the high fat diets used in this clinic. In their summary they wrote, "It is certainly very strong evidence that the prevalent assumption which postulates that diabetic hyperlipoidemia is dependent on the excessive ingestion of fat is unwarranted." A summary of some of their data is reproduced in Table 1.

TABLE 1

Total Blood Lipids		Interval
Before Treatment Gms. Per Cent	After Treatment Gms. Per Cent	Days
1.59	1.54	20
2.73	1.10	38
8.1	2.09	66
3.31	1.01	260
2.63	1.00	395

Recent studies[3] at the University Hospital have beautifully shown that the lipemia present in a group of patients was dependent upon the calories of the diet and that it was uninfluenced by the dietary fat.

The important facts taken from the record of one such patient will serve as an example. A young man who had been moderately obese for many years came to the hospital for the treatment of xanthomata. While still on an uncontrolled diet two determinations of his blood lipids gave the following readings: Total lipids 2.275 and 2.215 grams per cent; and cholesterol 0.323 and 0.316 grams per cent. The serum was creamy in appearance. Further examination showed that he was diabetic. He was desugarized and then given a series of diets containing increasing amounts of carbohydrate. During this period of 35 days he lost 29 pounds due to the low energy values of the diets. The xanthomata began to involute shortly after the diabetic diets were begun and had disappeared before the end of this first period. Throughout the second period of 30 days his diet consisted of protein 55 grams, fat 210 grams and carbohydrate 300 grams. These 3310 calories daily caused a gain of 8 pounds and a return of the xanthomata and the glycosuria. The blood fats at the end of this second period were: Total lipids 2.416 grams per cent and cholesterol 0.400 grams per cent. Finally he was given a diet containing the same amount of protein and of fat but only 100 instead of 300 grams of carbohydrate. It yielded 2510 calories. The patient again became sugar free and the xanthomata began to disappear. He neither gained nor lost weight. After 45 days on this diet, the blood fats were as follows: Total lipids 1.175 grams per hundred and cholesterol 0.225 grams per hundred. The important figures for our present purpose

XUM

are brought together in Table 2. The table makes it clear that the marked lipemia which resulted from a high fat diet excessive in calories, was reduced to half its former value in 45 days by a second diet containing the same amount of fat but whose calories had been lowered to the maintenance level. It is evident that, in this patient, fat was without effect upon the lipemia except in so far as it was a source of calories.

TABLE 2—THE RELATION BETWEEN CALORIES AND BLOOD FATS

Diet				Blood Fats		
Protein	Fat	Carbohydrate	Calories	Total Lipids Mgs. %	Cholesterol Mgs. %	Remarks Gain of 8 pounds in 30 days
55	210	300	3310	2416	400	Glycosuria
55	210	100	2510	1175	225	Weight constant Urine normal

CONCLUSIONS

Some clinicians believe that diabetic arteriosclerosis bears a casual relationship to the patient's diet. At present there is insufficient evidence to either prove or disprove this hypothesis.

If such a relationship exists, the fault lies in excess of calories. The vascular disease is not caused by the metabolic products of fat and the latter may take part in the production of arteriosclerosis only in so far as it is a source of calories.

REFERENCES

1. Ideals in the Treatment of Diabetes and Methods of Their Realization. Joslin, E. P., New England J. Med., 1928, cxcviii, 379.
2. Marsh, P. L., and Waller, H. G.: Arch. Int. Med., 1923, xxxi, 63.
3. Lipid studies in Xanthoma, Wile, V. J., Eckstein, H. C., and Curtis, A. C.: Accepted for publication by Archives of Dermatology.

STANDARDIZATION OF INSULIN TO TEN UNIT, FIFTY UNIT AND ONE HUNDRED UNIT STRENGTHS*

CHARLES L. HESS, M. S., M. D.
BAY CITY, MICHIGAN

Insulin solutions for clinical use were restricted, originally, to a strength of five units per cubic centimeter. Later, as the action of insulin became better understood, there were placed on the market greater strengths such as those containing 10 units, 20 units and 40 units of insulin, respectively. Finally, 80 unit and 100 unit insulins were added. This range of concentrations would seem very convenient for with a given dosage of insulin, say 20 units, one could use either one cubic centimeter of 20 unit insulin, one-half cubic centimeter of 40 unit insulin or only one-fourth cubic centimeter of 80 unit insulin. As regards the use of insulin subcutaneously, most diabetic patients object to repeated injections which are as large as one cubic centimeter. Even the use of three-fourths of a cubic centimeter causes some complaints. A tender lump is formed that is not massaged away easily and may persist for more than a day. Injections of one-half cubic centimeter or less, given with careful technic, usually lead to little or no discomfort.

So long as 10, 20, 40 and 80 unit insulins are used with insulin syringes graduated in units for each different strength, the ordinary patient has no trouble in measuring the amount of insulin desired as the number of units may be read directly on the scale. When the syringe is broken, too frequently a new syringe with the same graduations cannot be obtained on short notice. However, standard one cubic centimeter or one and one-half cubic centimeter long shank syringes are practically always carried on hand by drug stores and when one of these is obtained the problem arises of converting the unit dosage into terms of a cubic centimeter. For instance, 17 units of 40 unit insulin is contained in .42½ c.c. It would be simpler if dilutions of insulin were made more suitable for the standard metric syringe, such as dilutions of 10 units, of 50 units and of 100 units per cubic centimeter.

With the 100 unit insulin, the units may be read off directly on the long shank syringe graduated in hundredths such as the ordinary tuberculin syringe. Thus, 40 units would require forty hundredths of a cubic centimeter. Dosages of thirty or more units may be measured with less than one per cent of error.

With the 50 unit insulin, the number of hundredths of a cubic centimeter required is twice the number of units desired. In this case, 20 units would require .40 c.c. Fifty unit insulin is more suitable for injections of five to thirty unit dosages requiring .10 to .60 c.c. on the metric syringe. For diabetic use, by far the major-

* Presented before the Section on Medicine at the 108th Annual Meeting of the Michigan State Medical Society at Detroit, September 28th, 1928.

ity of insulin injections come within this range.

Injections of less than five units are seldom administered and in these cases, in place of the 50 unit insulin, 10 unit insulin may be used. The number of units are then read directly in tenths of a cubic centimeter.

Data on patients for the clinical effects of the 50 unit and also of the 100 unit insulin in comparison with the 40 unit insulin were obtained by testing the urine for sugar and by determining the sugar content of the blood one-half or one hour before and two hours after weighed meals, preceded by the insulin under study**. Tests for urinary sugar were made with Benedict's qualitative solution (J. A. M. A., 57:1193, 1911). Blood samples were drawn in the laboratory and immediately tested for sugar by the method of Folin and Wu (J. Biol. Chem. 38:90, 1919, ibid., 41:367, 1920). All diets were in anti-ketogenic balance, carried two-thirds to one gram of protein per kilogram of patient's weight and, in most cases, ranged from 30 per cent to 50 per cent over the basal metabolic rate, tested with the Boothby-Sandiford gasometer.

CASE REPORTS

Case 1—A diabetic, No. 1871, female, aged 45, five feet three and one half inches in height and weighing 125 pounds, was under diabetic regimen for over three years. For two years, she was on a diet of carbohydrates 60 grams, protein 47 grams and fat 147 grams, total calories 1769, with insulin one-half hour before the morning and the evening meals. The diet was divided so that the principal meals were given morning and evening with a light lunch at noon. Comparisons of her urinary and blood sugars, following the administration of the 40 unit, of the 50 unit and of the 100 unit insulin, are given in the first half of Table 1.

Case 2—A diabetic, No. 1590, femaile, aged 46, five feet three inches in height and weighing 135 pounds, had diabetes for seven years. At the time the tests were made, she was on a diet of carbohydrates 60 grams, protein 60 grams, fat 80 grams, total calories 1200. This was intentionally low as she had a basal metabolic rate of minus 15 per cent and gained weight on a diet over 1,400 calories. The diet was divided into morning and evening meals with insulin and a light lunch at noon without insulin. The results of comparative tests are found in the second half of the table.

In these two patients, the variations in the urine and blood sugars were no greater for 50 unit and 100 unit insulins than for 40 unit insulin alone. Both of them were tested at different times for more than a year until it was found that 40 unit, 50 unit and 100 unit insulins could be used interchangeably without any effect being produced by one concentration that was not produced, in a similar condition, by each of the others.

Ten other patients with blood sugar renal threshholds between seventeen hundredths and twenty-two hundredths per cent, were given 50 unit and 100 unit insulins to use interchangeably with 40 unit insulin for several months. When 40 unit insulin kept the patient's urine sugar free before and after meals, the 50 unit and 100 unit insulins did likewise. Blood sugars were determined only when the patients reported in for their routine monthly tests. No differences were found that could be attributed to any one of the three dilutions used.

At first it was thought that the 100 unit insulin might be absorbed more rapidly than 40 unit and 50 unit insulins and, hence, act more quickly and intensely. In certain patients taking 40 unit insulin with a given meal and insulin dosage and with their blood sugar averaging twelve hundredths per cent, two to two and one-half hours after eating, hypoglycemic symptoms did occur when 100 unit insulin was substituted for 40 unit insulin. However, these reactions were rather inconstant and would also occur, at times, following the use of 40 unit and 50 unit insulins. Later, it was found that such reactions with 100 unit insulin were seen in two types of patients, those who had recently been brought out of a diabetic coma and those who had been on a weight reduction diet. The cause of these reactions apparently was due not to the use of insulin in higher concentrations but rather to some body factor such as a low glycogen reserve. This appeared the most likely as these irregular reactions disappeared within two or three weeks, in both groups, after the total caloric intake was increased.

SUMMARY

1. For diabetic patients on a full maintenance diet, 50 unit and 100 unit insulins are apparently interchangeable with 40 unit insulin on a unit basis and may be given in the same manner with expectation of obtaining the same effects.

2. For patients either following coma or on a weight reduction diet with associated low glycogen reserve, insulin of minimal dosages and lower concentration is recommended.

3. Two-thirds of a cubic centimeter of 40 unit, 50 unit or 100 unit insulin is about

**Forty unit insulin, Stearns, was purchased on the market while 50 unit and 100 unit insulins were obtained from Frederick Stearns and Company of Detroit.

TABLE I

Comparisons of the Effects of 40 Unit Insulin with the Effects of 50 Unit and 100 Unit Insulins in Diabetes.

Date	Insulin				Diet			½ Hr. before Meal		2 Hrs. after Meal	
	Units per c.c.	Number of Units	Hour before Meal	Time of Day	Carbohydrate gms.	Protein gms.	Fat gms.	Urinary Sugar	Blood Sugar	Urinary Sugar	Blood Sugar
					Case 1—Patient No. 1871				%		%
7-24-26	40	26	½	A. M.	22	17	50	0	.17	0	.09
7-26-26	50	26	½	A. M.	22	17	50	0	.20	0	.11
8- 2-26	40	26	½	A. M.	22	17	50	+	.22	0	.14
11-10-26	50	26	½	A. M.	22	17	50	+	.25	+	.20
11-11-26	40	26	½	A. M.	22	17	50	+	.33	+	.20
11-12-26	100	26	½	A. M.	22	17	50	+	.22	+	.20
7-22-26	40	24	½	P. M.	37	17	57	0	.....	0	.08
7-23-25	50	24	½	P. M.	37	17	57	0	.....	0	.09
7-26-26	50	24	½	P. M.	37	17	57	0	.....	0	.08
8- 2-26	40	24	½	P. M.	37	17	57	0	.....	0	.08
					Case 2—Patient No. 1590						
5-10-26	50	28	1	A. M.	29	20	30	0	.....	0	.13
5-11-26	50	28	1	A. M.	29	20	30	0	.....	0	.09
5-12-26	50	28	1	A. M.	29	20	30	0	.....	0	.10
5-18-26	40	28	1	A. M.	29	20	30	0	.....	0	.13
5-19-26	40	28	1	A. M.	29	20	30	0	.....	0	.07
11-11-26	100	40	1	A. M.	29	20	30	+	.22	+	.17
11-12-26	40	40	1	A. M.	29	20	30	+	.21	+	.17
11-13-26	50	40	1	A. M.	29	20	30	0	.20	0	.13
5-11-26	50	18	½	P. M.	25	27	30	0	.....	0	.13
5-12-26	50	18	½	P. M.	25	27	30	0	.....	0	.07
5-14-26	50	18	½	P. M.	25	27	30	0	.....	0	.08
5-18-26	40	18	½	P. M.	25	27	30	0	.....	0	.12
5-19-26	40	18	½	P. M.	25	27	30	0	.....	0	.10

the maximum volume the average patient tolerates on repeated injections without complaint of local tenderness and persistence of induration.

4. The dosages of 10 unit, 50 unit or 100 unit insulins are much easier to compute in terms of a cubic centimeter than those of 20 unit, 40 unit or 80 unit insulins.

5. Standardization of insulin solutions to 10 unit, 50 unit and 100 unit strengths is recommended for general use with the standard long shank (tuberculin) metric syringe.

6. Fifty unit insulin will meet most requirements and is adapted especially for injections of 5 to 30 units. For injections of less than five units, 10 unit insulin might be preferable. One hundred unit insulin is advised for dosages greater than 30 units for patients who object to injections of amounts over two-thirds of a cubic centimeter.

FLYING ELECTRONS CAUSE EVOLUTIONARY CHANGES

The mutations, or sudden evolutionary changes, that can be caused by exposing living organisms to X-rays, radium and similar powerful radiations, are probably due to high-speed negatively charged electrons, or beta rays. Such rays are given off directly by radium, and arise as a result of X-ray bombardment of solid matter. The researches on which this conclusion is based were described before the American Society of Zoologists by Dr. Frank Blair Hanson of Washington University, St. Louis. Dr. Hanson exposed fruit flies to the action of radium, giving different sets of them varying degrees of protection behind thin lead screens. The number of mutations produced varied according to the degree of protection. Then he made measurements of the number of beta particles that got through the same set of screens, and found that these varied in exactly the same numerical proportion as the mutations. In brief, the more intense the beta-ray bombardment, the more frequent the mutations.—Science Service.

ASCHHEIM-ZONDEK HORMONE TEST FOR PREGNANCY

The Aschheim-Zondek hormone test for the diagnosis of pregnancy was carried out in 132 cases by Henry W. Louria and Maxwell Rosenzweig, Brooklyn. Eighty-seven specimens came from women in all stages of pregnancy and showed a positive reaction in 98 per cent. The earliest case of pregnancy examined was in a woman whose menstrual period was seven days overdue. There were several other women in the first three weeks of gestation, all of whom showed a positive test. The importance in this type of case is obvious, in that a diagnosis of pregnancy is possible before physical examination is positive, thereby differentiating the pregnant uterus from the slightly enlarged nonpregnant uterus. The remaining forty-five specimens obtained from nonpregnant patients showed a negative reaction in 91 per cent. The test is recommended, therefore, on account of its high percentage of correct results and its simplicity. Further experience with the test will undoubtedly aid in reducing the element of error.—Journal A. M. A.

THE IMPORTANCE OF EARLY DIAGNOSIS OF DIABETES*

HENRY J. JOHN, M. D.
(Cleveland Clinic)

As a result of many observations and long experience we have come to realize that the proper time to treat tuberculosis is in its incipiency. It is then that we can get the best results and can restore the patient to normal life and to his work so that he can take care of himself and of his family. In a late stage of tuberculosis, when both lungs are involved and the process is very extensive, a cure can rarely be accomplished and even so it can be brought about only after a long, tedious and expensive course of treatment, and the result at its best is questionable. Not only the medical profession but also the public has been educated regarding the proper treatment of tuberculosis, consequently there is little or no difficulty in persuading the patient to submit to the proper routine as soon as any signs of incipient tuberculosis become manifest, and the cure depends merely upon the establishment of a well-standardized routine.

Now, if we consider the problem presented by diabetes, this in substance is not different from that presented by tuberculosis. Here, too, we are dealing with an "incipient stage" which for lack of a better term I shall speak of as the "prediabetic stage", and we also deal with an advanced stage, which has been described in the literature in its final phase as "total diabetes". By this latter term we mean the condition in which the patient is unable to burn any carbohydrate and converts into sugar—and consequently excretes—58 per cent of his protein intake and 10 per cent of his fat intake. Fortunately, such cases are rare, but they do exist. Between these two extremes we have cases of diabetes in all degrees of severity.

The problem of treatment immediately presents itself. Naturally we cannot offer a standardized formula which would fit all cases—as all cases are not alike and consequently cannot be treated in the same way. We must individualize the treatment in all cases according to the needs of the patient and it is for that reason that each patient presents a problem which must be individually worked out and his needs ascertained.

Treatment, of course, can begin only at the time when the patient presents himself for examination, and the patient usually does not come until he has convinced himself that there is something radically wrong with him, that he is losing weight, is drinking a large quantity of water and is passing a great deal of urine. The diagnosis is easy then, for we are confronted with a frank case of diabetes. However, we occasionally see also a different type of case, one in which no symptoms whatever are present. In such a case the patient consults the physician for some other reason, and the physician, in making a thorough examination, detects a trace of sugar in the urine. In other cases glycosuria is discovered in the course of an examination for life insurance.

The question which arises in the latter types of cases is: Can we disregard a trace of sugar in the urine, or should we do something about it? Do we disregard crepitant rales in the apex of a lung? No! We refer the case to a specialist for his opinion and for X-ray study. In a case in which there is a trace of glycosuria the problem is identical. If we are equipped to do it, a blood-sugar test should be made at once, preferably two and a half hours after a meal rich in carbohydrate, and if the blood-sugar is above the normal, then we may know that we are dealing with a case of diabetes. Or we may go a step further and make a glucose tolerance test. If one is not equipped to make these tests, then the case should be referred to a physician who is so equipped.

In the course of routine blood-sugar examinations made daily in a large series of cases as the patients go through a large diagnostic clinic, it is amazing to see how frequently cases of diabetes are thus picked up—cases in which there has not been a sign or symptom of diabetes. In other cases in which glycosuria is discovered in the course of a routine examination, further tests either show that incipient diabetes is present or prove that the glycosuria is non-diabetic, in other words, that the patient has a low renal threshold.

In many cases in which the patient comes to our clinic because of some other ailment, and neither he nor the examining physician has even the slightest suspicion that a diabetic condition is present, we find in the routine blood examination a blood-sugar value of from 300 to 400,

* Read before the Section in Medicine, Michigan State Medical Society, September 27, 1928.

which may or may not be accompanied by glycosuria. The highest blood-sugar value without glycosuria which I have found this year was 552. This figure, of course, is exceptional, although figures between 200 and 300 are not rare. From this, one can readily see that the examination of the urine alone is hardly sufficient if the best results are to be obtained.

Do the mild cases of diabetes require treatment? I feel that the early cases are the most important cases with which we have to deal. The data in a mild, early case

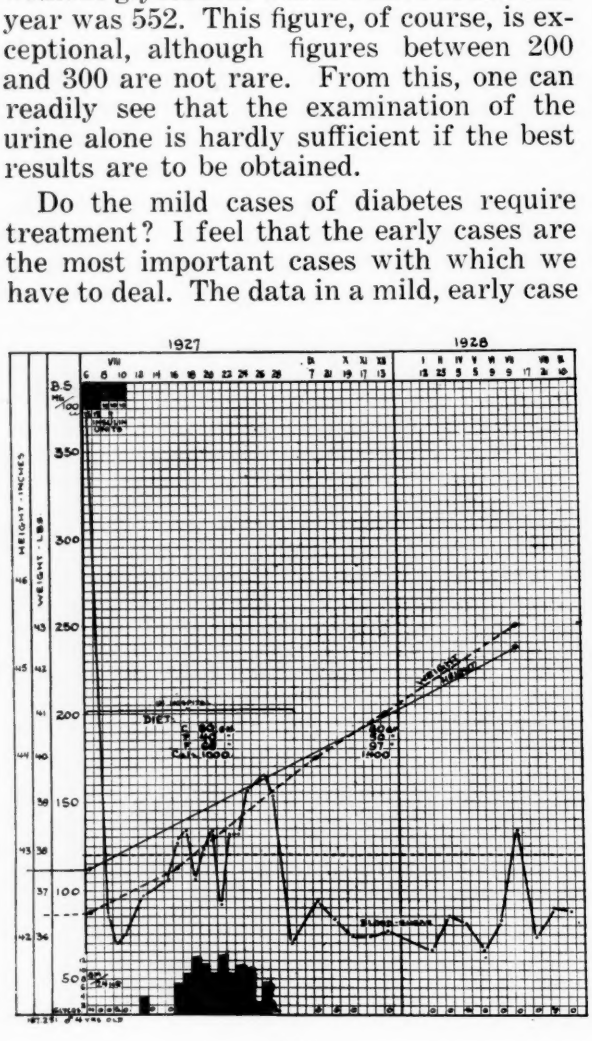

Chart 1

Chart showing the progress in a case of early or functional diabetes in a boy 4 years of age. The fasting blood-sugar values were kept at a normal level for over a year without insulin, the child meanwhile making a normal gain in weight and height.

of diabetes in which the condition is kept under control by means of a mild restriction of diet alone are shown in Chart 1. The patient was a four-year-old boy who came under my care when his blood-sugar content was 375 mg. per 100 c.c. and severe glycosuria was present. I kept him on insulin treatment for just five days and he was in the hospital altogether 24 days. When he was discharged, his blood-sugar level was normal and his urine sugar-free. Ever since that time, which is now well over a year ago, every test with but one exception has shown a normal blood-sugar, and this has been accomplished by diet alone. This is a good illustration of an early functional case in which most of the insulogenic function was regained. As time goes on, we should be able to maintain this improved condition; however, I feel that an entirely normal status can never be regained. Consequently, it is quite necessary to keep such a case under close observation in order to bring the patient safely through the early years of childhood.

Another case which illustrates the importance of even a slight rise of the blood-sugar is that of a physician, 58 years of age. In August, 1921, his fasting blood-sugar was 132 mg. per 100 c.c. and there was no glycosuria present. No treatment was instituted and two months later the urine was found to be sugar-free. However, in November, 1926—nearly five years later—he was found to have glycosuria and a blood-sugar content of 199 mg. per 100 c.c. four and a half hours after eating. One simply cannot afford to disregard slight rises in the blood-sugar, if he wishes to protect his patients from the development of frank diabetes.

Let us consider for a moment the evolution of diabetes: It starts as a functional diabetes, namely, a condition in which the cells of the islands of Langerhans are not destroyed, but are merely functionally inactive or hypoactive because they are swollen and vacuolated and contain granulations. In this stage the production of insulin is below normal and thus the blood-sugar rises and the urine is apt to show sugar. If we lift the burden at this stage by proper diet or by diet and insulin, the islands return to normal—at least partially, and begin again to secrete insulin. Consequently, the permanent reduction of diet in such a case needs to be slight. On the other hand, if we do not reduce the load at this stage, then the injury already suffered by the islands increases to the point of destruction and they cease to secrete insulin. Only those islands which are left functionally active can secrete insulin; so the total amount of insulin produced is far below normal, and the patient's condition becomes one of severe diabetes. It stands to reason, then, that we cannot afford to lose valuable time, but at whatever stage we get the patient, we must start treatment at once in order to preserve as many of the islands as possible.

In these cases, as we have said, glycosuria may or may not be present, and they will repeatedly present a normal fasting blood-sugar level. The only obvious abnormality which they do present is a blood-sugar level above 120 mg. per 100 c.c. from two and a half to three hours after a meal.

This is not a normal finding, for in a normal individual the blood-sugar level should be normal from one to two hours after a meal. If a glucose tolerance curve is made in the case of these patients, even though the fasting blood-sugar is normal, the curve goes higher and stays high longer than it does in the case of a normal individual. An example of this is shown in Chart 2. I have always interpreted such curves as evidence of a pre-diabetic condition and consider the underlying physiological condition to be an inability to secrete sufficient insulin to cope properly with the problem of carbohydrate

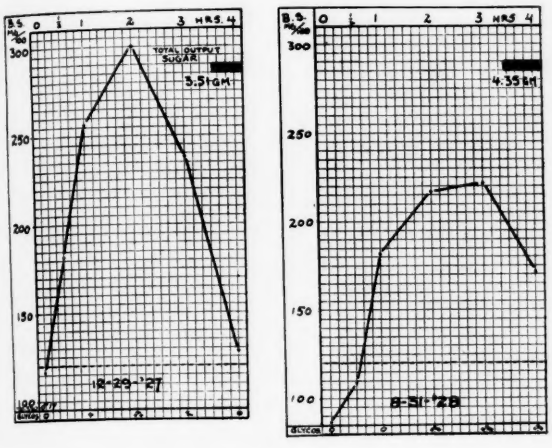

Chart 2

Curves charted from two glucose tolerance tests made at an interval of eight months in the case of a boy 17 years of age. The first test showed a mild diabetic condition and the patient's diet was somewhat restricted. Although the fasting blood-sugar value was normal at the time of the second test, the test showed that the pre-diabetic condition was still present and that restriction of diet was still necessary.

metabolism. As stated above, I have applied to these patients the term "pre-diabetic", for I feel that psychologically such a term has a good effect. It conveys something definite to the patient, who is more likely to watch his diet and to report for a periodical examination than if he were simply told that there was a slight abnormality of the carbohydrate metabolism.

I feel, therefore, that these patients are on the road to diabetes if they are not diverted from it in time by a slight regulation of their diet. However, I am not yet ready to give a final judgment in this matter. I have been making repeated glucose tolerance curves once every two years, in cases of this type, and have been keeping the patients under observation. I feel that in a decade or so, ample material will be available from which to draw definite conclusions.

At present I feel that a cautious regulation of the diet, that is, the prevention of over-eating, particularly of carbohydrates, is the proper and judicious procedure in these cases. It is not, however, a justifiable procedure to withhold insulin from a patient early in the disease just because he can get along without it, and then to give it to him later in large doses because in the meantime his condition has been much aggravated. It is nothing short of folly to show that one can keep a diabetic patient sugar-free on diet alone, when this diet is so low that no one could work on it. We must restore the patient to a condition in which he can be productive and can lead a life as nearly normal as possible, and that means that he must have a diet of from 1800 to 2500 calories. If such a diet alone keeps the urine sugar-free and the blood-sugar within reasonable limits, then all is well and good; but if not, then with all the treatment we have not accomplished an iota of good so far as the patient is concerned. It is better to give him a livable diet and enough insulin to consume his food, than to let him merely vegetate. We used to have to let patients with severe diabetes do just that before the discovery of insulin, but that period is now over. We can restore them to their offices and their jobs at "full production capacity", and that is the real test of any treatment.

There are certain conditions which are prone to be accompanied by diabetes and when a physician sees such a condition, he should be particularly mindful of this possibility. These conditions are as follows:

1. *Obesity.* We must bear in mind that about 95 per cent of all cases of obesity are of exogenous origin, that is, they are due to overeating. Obese individuals are usually very fond of carbohydrates, which throw a heavy load on the pancreas. If that organ chances to be weak, it is apt to break down and diabetes results. Not all fat individuals are diabetic, but a large proportion of them are on the road to diabetes. In the small series of cases of obesity which I reported in 1927, the incidence of diabetes was about 42 per cent and other authors have published similar observations. This is too high an incidence to be disregarded.

2. *Hyperthyroidism.* Hyperthyroidism often occasions a rise in the blood-sugar level, which in turn produces glycosuria. No longer do we disregard glycosuria accompanying a condition of hyperthyroidism, but try to discover whether it is of a transitory nature or whether it is diabetic

in origin. I have seen cases in which glycosuria was disregarded and these patients have returned later after an entirely successful operation, suffering from frank diabetes. It is true that some of these patients escape, but others do not. Our problem is not to miss this early stage of diabetes, but by prescribing a proper and judicious diet and by the administration of insulin, to tide the patient over the critical

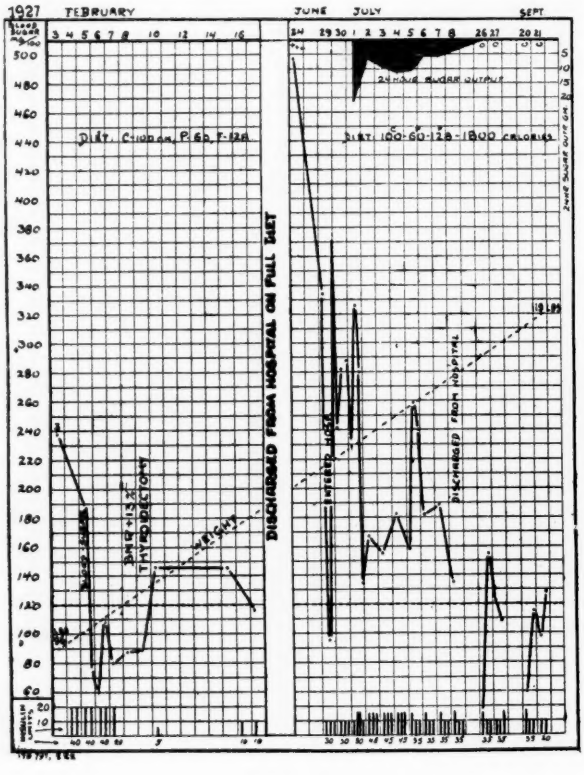

Chart 3

Chart showing the blood sugar values in a case of hyperthyroidism in a young girl 22 years of age. When the patient entered the hospital for operation there was only a slight elevation of the blood-sugar level, which quickly subsided on diet and insulin, and showed only a slight rise following thyroidectomy. Because of the apparent mildness of the diabetic condition, the patient was discharged on full diet. Subsequently the diet was increased and, as a result, the patient returned to the hospital four months later with frank diabetes.

stage and to restore the weakened insulogenic function to a condition as near normal as possible. Let me cite just one such case, that of a girl 22 years of age. When she came into the hospital it was found that she had a slight rise in the blood-sugar level (Chart 3). On a restricted diet and insulin, the blood-sugar level quickly became normal and it remained normal without insulin. After thyroidectomy it rose slightly, but came back quickly to normal. Because of this quick response, the patient was discharged from the surgical service with only the instructions given in the uncomplicated case of hyperthyroidism and without any instructions concerning dietary restrictions necessary in diabetes. Consequently, her family physician prescribed a high caloric diet in order to help her regain her weight. The patient returned four months later in a condition of frank diabetes, the blood-sugar level being 496 mg. per 100 c.c. and with pronounced glycosuria. She then had to be treated for diabetes. Such a case as this convinces us that we cannot afford to disregard the presence of glycosuria or a slight hyperglycemia in these cases of hyperthyroidism.

3. *Infections.* Infections often cause hyperglycemia. Why they should cause it in some patients and not in others, I do not know, unless it be that in the case in which we find hyperglycemia we are dealing with a subnormal insulogenic function. Be that as it may, when hyperglycemia is discovered, it calls for attention and can not be disregarded. Both the urine and the blood should be examined at regular intervals in patients suffering from infection. This is particularly true in the case of children, for we often find symptoms of diabetes shortly after an attack of measles, mumps, scarlet fever or tonsilitis. I feel keenly that the urine of every child who has had one of the above-mentioned infections should be examined once a week for at least three or four weeks after the attack, in order to safeguard the child.

4. *A familial predisposition to diabetes.* In families in which one or both parents or grandparents have or have had diabetes, one should ever be on his guard in respect to the children. A urinary examination alone is not sufficient precaution. Each child should be subjected to a blood-sugar test two and a half hours after a meal rich in carbohydrate. Such a test takes but a few minutes and there is hardly any other single procedure in medicine which offers so much information for the amount of energy expended.

5. *Pregnancy.* I wish to emphasize the importance of the finding of glycosuria in pregnancy, because it has not received sufficient emphasis in the literature. Glycosuria in pregnancy is fairly common. Usually it is benign glycosuria, but I have seen several cases in which it was due to diabetes, and in such a case it is extremely important that it be discovered in order that complications may be prevented. I feel, therefore, that whenever glycosuria is discovered in the case of a pregnant woman, a blood-sugar examination should be made two and a half hours after a meal,

and if glycemia is discovered, treatment should be instituted at once.

SUMMARY

1. Glycosuria, no matter how slight, should never be disregarded. One should ascertain at once whether it is a diabetic or a non-diabetic glycosuria.

2. It is in the early stage of diabetes that one has the opportunity to do the most good for the patient, or the patient's condition may even be improved. The diabetes can be kept in the mild stage with but little treatment and very little dietary restriction. These early or mild cases, however, should be under the surveillance of a physician and these patients should be examined periodically in order to determine whether or not the condition is being held in check. If it is found to be aggravated, more rigid measures of treatment must at once be instituted.

3. A slight rise of the blood-sugar level, either while the patient is fasting, or two and a half hours or longer after a meal, should never be disregarded, for often this slight elevation is the first warning that a diabetic condition is threatening.

4. In obesity, infectious diseases, hyperthyroidism, pregnancy, and in cases in which there is a familial history of diabetes, the possibility that diabetes may be present should always be considered, and if glycosuria is discovered in such a case, careful tests must be made to rule out diabetes and the patient must be kept under the closest surveillance.

REFERENCES

1. John, H. J.: "The Relationship of Obesity to Carbohydrate Metabolism." Am. J. Med. Sc., Feb. 1927, 173:184.

2. John, H. J.: "Glycosuria and Pregnancy. Surg. Gyn. Obst., April, 1926, 543-545.

DISCUSSION

Dr. P. Marsh, (Detroit). The term "high fat", as Dr. Newburgh pointed out, was used to describe the diet following a period in which almost no fat was used. It was a high fat diet in contrast to the diets of the time when diets were developed. It doesn't matter whether one calculates a diet on the basis of Wiggat's formula, or on the basis of the formula that the Toronto group are using, or on Shafer's formula, or according to Wilder's charts. They are all high fat diets in the sense that we are using them. As Dr. Newburgh has pointed out, and as I want to emphasize, they are not just a lot of diets for the patients, but diets that are constructed on fundamental metabolic principles. When the diets were first proposed, it was insisted by the group who were using diets very low in fat that our patients would all promptly go into coma and die. Because of the investigations of the intermediary metabolism of the fats by such men as Woodyatt, Schafer and that group, it was shown that that, of course, would not happen, and, in fact, the patients did not die in coma. It was then stated that the diabetic patients who were fed any considerable amount of fat would rapidly lose their glucose tolerance, it would became more and more severe as they were damaged by the fat. Fat is a poison to the diabetic. That has not happened. That could not be shown to be true in fat. The latest objection to the high fat diet is that the fat in the diet will cause arteriosclerosis. Dr. Newburgh has pointed out that Dr. Joslyn, for instance, has not been able to produce any evidence that that is true. He might have gone a little bit farther. He pointed out that the disturbance in the fat metabolism, particularly in the blood fats in middle age, does not occur. He might have gone a little farther and stated that there is no proof that even if such a hyperlipoidemia did occur, it would cause arteriosclerosis.

It is true that the feeding of large quantities of cholesterol to animals will damage the media of the arteries. It does not, however, introduce anything like the arteriosclerosis of the diabetic. The burden of the proof is certainly on Dr. Joslyn.

After all, the final decision in the matter must depend on what happens to diabetic patients. I think it is true that the majority of diabetics in the United States now are getting 150 grams of fat a day or over. Certainly it has not been shown that arteriosclerosis is increasing among diabetics beyond what might be expected from the fact that they are living longer than they used to live before we had insulin. We certainly have not seen an increase in arteriosclerosis of that sort.

We have one young man who has been on the same diet for five and one-half years with insulin, and was on a very similar diet for a year before that, so that makes a little over six and one-half years, during which he has never taken less than 240 grams of fat a day. He now has a total lipoid value in the blood of 800 milligrams, well within normal limits. Certainly in his case nearly seven years of large fat feeding (a very active young man) has not increased his blood lipoids, and he has no arteriosclerosis.

I think that until some seemly evidence is produced that the arteriosclerosis we see so commonly in diabetics is due to the fat in the food, we can't accept that criticism of a high fat diet.

Dr. George E. McKean (Detroit): If there is anything I don't know much about it is diabetes. I hate to admit that there is anything I don't know much about, but I am going to admit this very quickly. This most interesting question Dr. Newburgh has brought up and his beautiful work in his demonstration seem to be most convincing on his side of this question. Of course, the burden of proof does remain with those who contend that the high fat diet does produce arteriosclerosis. I don't think any of us know what does produce arteriosclerosis. The last time I looked over the literature nobody seemed to know. So I think we are rather lost on that point.

A great many diabetics truly have arteriosclerosis, and the percentage of diabetics with arteriosclerosis is higher than with the general run of patients. But to jump to that conclusion because of the high fat diet, either taken by the patient since it does effect to balance up his nutrition in that way, or when ordered by Dr. Newburgh or his followers, I think that is very hard to say and

is going beyond the limits. To say, on the other hand, that because there isn't an increase of lipoids in the blood on the high fat feeding that there couldn't be an arteriosclerosis from that high fat feeding is hardly conclusive either, I think. I am going to leave that subject with myself and with you to decide by future work of these gentlemen and by our own work to find what really in the first place might cause arteriosclerosis, and then to see whether there is another way of reaching the deposits in the vessels besides this high fat content of the blood.

The other paper, Dr. John's paper (I heard only two), was certainly a charming discussion of a much needed line of investigation, the pre-diabetic. I was more than interested in it, and I think it offers us a very good field for work. I think most of us, especially those of us who don't know any more about diabetes than I do, will do well to follow up closely the suggestions of our friend from Cleveland.

Dr. Merrill Wells (Grand Rapids): These papers have brought out several of the very interesting problems we see in a number of diabetics one meets every day. I was glad to hear Dr. Newburgh emphasize the importance of the fundamentals of diet alone. In connection with the influence of fundamental diets on changes that come to the diabetic, I feel that it is well for us to consider the normal individual and what the different proportions in our constructed formulas mean in the normal individual. After the war, I think it was generally understood, and the figures will bear it out, that from the standpoint of health education, and so forth that was disseminated through many thousands of men carried back to the home communities, that it has been shown that there was a definite reduction in the amount of meat consumed in this country and certain other countries. The leather manufacturers have recently advertised that fact. There has also been an increase in that period in the amount of sugar consumed in certain countries of the world. I think the point brought out by Dr. Newburgh, the effect of caloric feeding, increasing of calories in the storage of body fat, is a very important thing in that very connection. We can oftentimes increase the weight of an individual and produce very evident accumulation of flesh, and also show an increase in blood lipoids by the feeding of carbohydrates in addition to an average fat formula. Just as Dr. Newburgh has proved in the laboratory many times at Ann Arbor, conversely in our reducing diets when we may be called upon occasionally to balance up for people who are considerably overweight, many times we pay no attention to the fat content at all, or not nearly to the extent we do carbohydrate feeding in these diets to reduce weight and balance other things according to usual principles. So that point is very well taken, it seems to me.

In Dr. John's paper, and in his emphasis especially on the treatment of the pre-diabetic, I believe he has touched upon a very definite cause of considerable trouble in later life in some of these people because of the things we have overlooked.

At the risk of being called occasionally too fussy or too careful, we have made it a fairly general rule in our work to insist that the individual who shows more than a trace of sugar occasionally, or shows a trace only occasionally spend a few days in the hospital for tolerance determination and the balancing up and be given perhaps a safety first program for later living. At that same time, we have the opportunity to pick up other little abnormalities and correct them by the removal of foci of infection and certain other simple procedures, errors that will make for trouble later. I believe, as Dr. John says, that that is a valuable service to any individual.

We too often meet the patient who has told, "Well, two years ago when Dr. So-and-So looked me over for life insurance he found a trace of sugar and he said if I didn't eat any sugar for a little while I would be all right." No tests were made to check up on those things. I believe that is a procedure that should be carried out as Dr. John says with a tolerance test, perhaps, and by simply checking with a simple alimentary tolerance test, urine and blood for a time.

The question that is brought up as a converse to that, perhaps, is another source of disadvantage to the patient in that in an attempt to feed certain cases a large diet for efficiency, some men, without studying the basal requirements of the patient and without constructing the diet, are prone to leave out certain items of food grossly and use a few units of insulin before meals. That, of course, is unjustifiable, I think, in every one's mind, and should never be employed.

The question of the return of tolerance in an individual, it seems to me, is not settled as far as we can judge on an accurate basis. Occasionally, clinically, we find a case in whom after a year's obseravtion we feel that there is, to all appearances, a return of partial tolerance, or at least an increase in tolerance of glucose. Most of those cases have not been thoroughly studied at a period when the evidence could be forthcoming.

Continuous study in the hands of Dr. Newburgh and Dr. John and others where we try to check up those patients over periods of days with and without their insulin is, of course, going to bring out evnetually the clinical evidence in this matter. In the meantime, we are between the fires of efficiency for the patient, his working ability, and what he does actually from a laboratory standpoint.

If you remember as long as fifteen or sixteen years ago, Bensley at the University of Chicago was staining the islands of Langerhans of the pancreas with special stains and noting the changes occurring there. Dr. Johns has mentioned the granulation and vacuolation noted. I have never seen a report, and perhaps we never will see a report of an absolute scientific check on such a case, but if we have a case in some well-equipped situation where an individual who has been on diabetic management for a considerable length of time meets death from some accidental cause or quickly otherwise, not subject to long infection or something of that sort, and the pancreas can be obtained and stained according to some of those staining procedures of Bensley, we perhaps would be able to find whether there had been an actual regeneration or re-establishment of function along with the changes from the development of granules, and so forth, or currents of granules. In the meantime, perhaps we can't get the absolute proof, but it is very rarely that we have a case clinically which seems to show.

Dr. Noel F. Shambaugh (Ann Arbor): In the reams of literature which have been written about the fine adjustments necessary in insulin therapy and the treatment of diabetes, I wonder if we are not prone to lose sight of certain fundamental principles which must be used in the

therapy of diabetes. Insulin has done for us a number of remarkable things, but one of the things which insulin has done for us is to, I think, discredit role of fats in the therapeusis of diabetes.

Fats have two extremely important biologic characteristics. In the first place, but one-tenth of the fat molecule is converted into carbohydrate, and in the second place, the caloric yield from fat is extremely high so that fat serves as an excellent medium for supplying calories to the diabetic. Not only has the experimental work shown that this is not an injurious procedure, but evidence rather points toward the conclusion that it is an innocuous procedure.

What is the advantage which accrues to us by the use of this regime? It means that a diabetic patient may be managed on a smaller insulin dosage if fats play a significant part in the caloric yield for that individual. This brings us to another important fundamental principle in the treatment of diabetes.

Diabetes is a disease which is poorly treated by making concessions to the patient; by concessions I mean a compromise in which the carbohydrate of the diet is materially increased above what a physician chooses to give. It has been our experience that if a patient is treated by the imposition of sharp restrictions, his course is better, perhaps, than if no restrictions were imposed. The more obstinate the patient, and the more important the patient, it has been our experience that the novelty imposed restriction is such a change that it may be made to operate psychologically for the benefit of the physician treating the case.

Dr. Don H. Duffie (Central Lake): I should like to ask two questions if I may. It is probable that perhaps half of the potential diabetics in the country are under the care of rural small town practitioners, men working alone, with no laboratory facilities, and they either are too lazy, or think they are too busy to do the conventional blood sugar tests. I wonder if Dr. John can tell us of any blood sugar determination even roughly approximate that is sufficiently simple which we country fellows can be induced to use.

The other question is: Where does Dr. Hess get his U-100 insulin?

Dr. L. M. Sadie (Detroit): I should like to ask Dr. Newburgh his attitude in high fat feeding in children. We know that in children where the frequency of infection is rather more noticeable than the chance of being upset by these infections, and coming nearer diabetic comas is rather more frequent, I should like to know whether or not he does really change or modify his attitude.

Also, I wonder whether Dr. Newburgh keeps the same attitude as he does in adults with the problem of growth in children, and when we serve their diet and see that normally they consume a considerable amount of carbohydrate and protein, whether that will promote their growth much more rapidly than in adults, and also his attitude with regard to the form of regular carbohydrate.

Dr. Hugo A. Freund (Detroit): I regret very much that I didn't hear all the papers and I extend my apologies to the essayists and to Dr. Newburgh. I want to say one word. I am in thorough accord, of course, with the high fat feeding. I think Dr. Newburgh has led the way and shown us the value of high fat feeding. Of course, in occasional exceptions, low fat feeding must be begun, but I believe we can all develop in our patients a tolerance to high fat feeding eventually.

I also want to say a word regarding a ready clinical method which was suggested to me when this gentleman asked a question regarding laboratory methods, that is with reference to lipoidemia where the fat content of the blood can not be measured by laboratory methods, we have watched a condition among our patients which, I think, leads to very quick and ready clinical conclusion. About five years ago McCann described the lipemia retinalis, that is a condition of fat in the arteries of the retina due to an accumulation of fat in the blood when the lipoid content of the blood becomes high. I believe if we are feeding high fats and are trying to raise not only the caloric intake, but the amount of fat our patient may take, a careful scrutiny of the patient's retina from time to time is a very edifying procedure. Not infrequently do we see changes, where there has been no change in the retina, soon develop, that is, the patient does not approach, of course, the severe grades of lipemia retinalis as seen in the outspoken case, but changes take place, a sort of whitish waxy appearance appears in the arteries of the retina which, as a rule, means that we are placing our patient on too high a fat ratio in the diet.

Dr. G. H. Wood (Detroit): It has been my privilege from the beginning to be in touch with Dr. Hess and listen to the discussion he has made on the higher strengths of insulin. It has been very interesting because he is really a pioneer in attempting a clinical study of the qualitative difference, if any, between the lower concentration and the higher concentration. It was assumed when the strengths of insulin were increased that when they doubled the strength, they simply divided the dose in half and no experimental work was done that I know of to prove the point.

Dr. Hess became interested about three years ago in the problem of simplifying the administration of insulin and considered that if we could have a hundred unit insulin it would be a very simple matter to measure the dosage with the insulin syringe. He procured some material and used it in the same proportions as other insulins and had two instant shocks. That raised the question of whether there was any qualitative difference. This study was started to attempt to settle this question. Of course, that is a subject which can be studied further to great advantage. I might say from my own limited experience, the only instant shock I have ever had in a patient came with a hundred unit insulin. I have had no shock with 50 unit insulin. The 50-unit is easily used by any physician who has been using 40-unit. The difference is only 25 per cent higher and you don't notice any particular difference in using 50 over 40 except that it is so much easier to read on the syringe. You simply take two gradations on your tuberculine syringe for 1 unit and it is easy to figure, every mark is a half unit.

I think Dr. Hess is to be congratulated on doing this work and keeping the close record he has on his patients and bringing to us something that will really simplify the administration of insulin both for the physician and for the patient.

Dr. D. P. Foster (Detroit): I certainly have enjoyed these three papers very much. I believe that that is a real step of advancement in regard

to having insulin dosage in 50-units. I believe in the 100-unit dose we are running into a little danger on account of the difficulty in measuring accurately such concentrated solution. That is the only objection I would raise to that. I was born and bred diabetically in Dr. Joslyn's clinic where Dr. Newburgh was and came out to the land where the bad boy finally landed. I want to bring one word from that camp in regard to the step which was made which I believe was an advance step, namely, the feeding of a higher fat diet rather than the no-fat diet. Dr. Joslyn's clinic is waiting for one thing, I believe, and that one thing is a report of ten-year results on this diabetic group which Dr. Newburgh and Dr. Marsh started in 1916. I think that that data will be of tremendous value to all of us to know and feel sure that these diets which were so unorthodox, could be fed and still have a patient live over the week end.

Another point I think that deserves emphasis is the fact that foods are coming more and more to be considered from their caloric value rather than from the kind of food. Dr. John's advice to his boy, "Don't eat sugar," followed by the advice, "Don't eat a lot of other kinds of food," is sound advice.

Two recent papers in Ann Arbor at the Biological meetings proved quite conclusively that fat would protect the body against excess nitrogen loss just as well as sugar, and sugar will certainly build fat in the body as rapidly as fat itself will, provided calories are equal.

There was one other point that seemed desirable to emphasize in Dr. John's paper, and that is a point that will prevent us from wasting a lot of energy in looking for diabetics. All fat persons who are over forty years of age certainly deserve sugar tolerance, and by some method that the man who is using it is familiar with and that he can accurately interpret. A large number of these patients certainly have what I prefer to call potential diabetes rather than pre-diabetes, because if they are properly treated they never will have diabetes, and certainly do show remarkable improvement in their feeling of well-being and the removal of symptoms which they never knew they had in the first place.

Another point which will lead one to test the right person is careful history taking. Sometimes we feel that there is no diabetes unless we have the cardinal signs of diabetes, the increased appetite, thirst, polyuria, weight loss and strength loss, whereas the side symptoms or the so-called complicating symptoms of diabetes may be present in a large number of these persons and never be recognized as such. The history of boils, of failing vision, of general pruritis, of bad teeth and recurrent infection, and tingling and numbness in the extremities which you will find in a tremendous number of persons who, before they were tested, you would never have suspected they had any such trouble as a blood sugar that was over normal.

Dr. Leonard F. Wendt (Detroit): I have had very little occasion to use the 50 or 100 insulin. Some men didn't know it was on the market. It has only been on the market a couple of years. It is true that insulins are quite equal in potency, no matter what the make of the insulin is. The insulin in the past was standardized by sending the various experimental bottles to six or ten different clinics, and then were tested on standardized patients. I took part in some of these standardization tests, but I believe that the majority of men are using insulin of too great a potency, and I do not use it because it is a waste of material and it is very expensive. U-100 insulin is much more expensive than 40, and if you waste a drop of the greater strength insulin you are going to lose quite a few pennies.

In regard to the syringes, we make it a rule to teach our patients the dose of insulin in c.c's. We are well aware that while we might procure an insulin syringe for the patient at first, they are very apt to break those syringes, and when they buy the second or third syringe they are going to buy a c.c. syringe. Therefore, we make it a practice to teach our patients both ways of administering the insulin. There are no objections to the 50 or 100-unit insulin if you require it, but I believe by readjusting the diet such large doses of insulin would seem unnecessary. In regard to Dr. Newburgh's paper, I admire the doctor for coming here and defending himself. His method of treatment has been brought up to question by a few men. They have never produced any evidence that it is not a good diet, and he has shown today that the high fat does cause an increase in the lipoids of the blood, but that is due to the total calories. I have used the Newburgh-Marsh diet in various ways and at various times, and have had no objections to it whatever, except in some patients who refused to take a high fat diet. While we are a carbohydrate-eating people (you all ate more carbohydrates than you did proteins or fats this morning, and will do the same this noon and this evening), I have changed and have been trying to feed the patients as much carbohydrate as they can tolerate and still remain with the normal blood sugar. I believe I have found that a patient requires less insulin where the diet contains less fat.

I have no objections to the high fat diet, and the only reason that I don't use it is that I haven't the dietitians that Dr. Newburgh has to administer the diet.

In regard to Dr. John's paper, we have made it a rule lately in patients who come to us for diabetes (and they come at all hours) where we find a blood sugar anywhere from 130 to 150, to insist on a glucose tolerance test. Formerly, we thought that did the patient a great deal of harm, but in those mild diabetics who have a low blood sugar, I don't believe it does any harm, and thereby we discover a good many diabetic patients.

Dr. C. L. Hess (Bay City): With regard to the insulin shocks or insulin reactions, we did get insulin reactions, particularly with the higher concentrations, that is, the U-100. First, that was anticipated as the likely result, but after using U-100 insulin, U-50 and U-40 later, interchangeably, so far to date it is my impression that these insulin reactions which occurred came with the higher concentrations in those patients after a condition of coma, or in those patients who are on a reduced diet, apparently, those patients where the reserve of the body is not very high. In those patients, many of whom are calibrated and are on a rather staple diet, we did not get those reactions with the U-100, or at least up to date we have not had them on a considerable number of patients.

Where they have used insulin interchangeably over a period of several months, I have asked them if they have noticed a difference between the different strengths used, whether the higher doses

seem to have different effects as far as symptoms are concerned, numbness of the tongue, peculiarities of mental conditions, and other conditions which are usual symptoms for reaction. They all state that once they get stabilized they can notice no difference whatsoever. In one patient particularly whom we have been keeping on a reduction diet to reduce weight and to keep the weight below normal, we have noticed that the higher strength of insulin will produce insulin reactions much more quickly than the lower strength insulins. We are studying that question still further.

I think the higher concentrations under certain conditions certainly will produce a more reactive effect and leave more to these reactions.

In regard to the use of U-100 insulin, I don't recommend its use in preference to the others, but it is added to this series to get away from the volume or the size of the injection which is used. For the ordinary case requiring five to thirty units, the U-50 insulin is quite ample, but in those patients requiring large amounts of insulin or an amount over 30 units, 30, 40, 50 and 60-units, then in that classification we have used the U-100 insulin to keep down the size of the injection. It seems with a large size injection that the patients very quickly have a preference for U-100 insulin as compared with that of U-40 or U-50 insulin. They likewise say that in those on the treatment that they notice no difference large size doses where they have been stabilized in the effect or tendncies toward reactions.

I think U-50 insulin will cover 90 per cent of the cases or 85 per cent at least, and the U-100 insulin might be used in those cases that load up over night in blood sugar, have a high blood sugar before breakfast which is very difficult to keep down, and in whom the tolerance in the morning is not very high. In those cases the U-100 insulin helps those patients who enjoy a large breakfast and are in the habit of having had it for years and do not feel good on a small breakfast as compared to a large size breakfast.

I think that the air of the U-100 insulin is considerable where small amounts are given, that is, less than 30 units. When you get over 30 or 40 units, I think you can measure the amount certainly within 1 or 2 per cent air at the least. Of course, many diabetics have trouble with aerosis which is a common complication, and I think it is advisable to have the syringe graduated so that the gradations are easily seen and in that way as few errors as possible will be made.

With regard to our experience with patients in computing U-40 and U-80 insulin is this: Many of them have never studied figures from the time they graduated in high school or possibly left the eighth grade, and after they have been away from that sort of mental calculations for fifteen or twenty years, they object strenuously to any mental calculations. They say, "I don't care how you compute this. You tell me how much I should take by showing me the marking on the syringe and I will take that." The minute you vary they become confused. They will usually call you up three or four times to verify the instructions you have given them, and finally convince themselves that you have given them the correct instructions.

Dr. L. H. Newburgh (Ann Arbor): I have been asked to discuss the use of the high fat diet in children. There are, of course, certain differences between the child and the adult. The great difference is the much greater demand on the part of the child for calories. Perhaps the average adult is satisfied with 30 calories per kilo, whereas the child will need from 60 to 120, depending on his age. The younger the child, the greater the caloric demand. That means, of course, that only a few children will succeed in getting enough calories from a diet to grow and prevent glycosuria without the aid of insulin. We use the same type of diet, however.

The next question is the supply of protein for the child. The child needs more protein than the adult because he has to store a certain amount. Dr. Bartlett, who worked with us some years ago, has continued his studies in this direction and has found that about a gram of protein per kilo will be sufficient for the adult, two-thirds of a gram or a half-gram is sufficient. That doesn't make very much difference in the diet. It is only a matter of a few grams.

It is, of course, also true that the child is very much more liable to infection. We all know the effect of acute infections on the tolerance which, of course, tends to increase the liability to acidosis, but the problem remains the same. If the infection occurs something has to be done about it. That doesn't interfere with the principle, so we use the same principle.

Perhaps our best example at present is a child who came to us when he was about two and a half years old, and has been on this plan since before the insulin period, that is, about eight years now, and has grown normally. He has attained the average weight for his age, goes to school and conducts himself as a normal boy nine or ten. He gives himself his own insulin.

I should like, if I might, to have just a minute or two to say another word about arteriosclerosis. I think it is important, when we are trying to find out the relation between diabetes and arteriosclerosis, to keep in mind that there are two types to the question. The common type, the common diabetic type, the type which is associated with gangrene is a type which was originally thoroughly described by Monckeberg and which goes by his name and is a disease of the muscular tissue of the blood vessels (peripheral) and tends to include the artery, produces gangrene of the heart, and usually of the foot. That is the type which we all associate with diabetes. So far as I know, no one has ever found a relationship between that form of arterial disease and food.

The other type which is of interest in relation to diet, also occurs in the diabetic, the type that is sometimes called Gaul & Sutton, the type that we recognize in association with hypertension, retinitis, myocardial degeneration, apoplexy, the common type of arterial disease which we find in the large man over 45 who has hypertension and drops dead on the street. That type also occurs with diabetes. I suspect there that diabetes is a complication of vascular disease. Autopsies in such diabetics with hypertension show this same type of vascular disease, Gaul & Sutton type, in the arteries of the pancreas. So the question arises whether the diabetes there isn't quite secondary and is analogous to several diseases, retinitis, myocarditis, or Bright's disease, or what not, so that I think we have two quite separate programs. Before we get very far, the first thing to do is to sort out these two groups of people and begin all over again.

Dr. Henry J. John (Cleveland, Ohio): I shall try to answer Dr. Duffie's question regarding the problem of the treatment of diabetes for the man

out in the country or in the small town. You will have to remember that diabetes was very successfully treated before we had insulin, before we knew anything about blood sugars, before they had become a common property as they are today.

Take one of our greatest clinicians in the country today in the field of diabetes, Dr. Joslyn. It has been just recently that he has been doing blood sugars. It is a question of a very few years. When we cannot do the best thing, we do the next best thing, and that is the old teaching. If you can keep the diabetic sugar-free, you have done about 95 per cent of what anyone can do in the treatment of diabetes. That means that you will go back to the old urinary examination. There I should make only one warning, and that is, do not examine single specimens, when you have a diabetic on a treatment, but examine rather twenty-four hour specimens once a week, and you will soon know whether the sugar reduction (you don't even have to make a quantitative examination) is increasing, whether it is stationary or decreasing. If you can keep such a patient sugar-free, you have gone a long way toward accomplishing what can be accomplished in the treatment of diabetes.

There are some short-cut methods of blood examination, these so-called micromethods, or others. I have never felt that they were quite reliable because several years ago it was my idea at that time to use these micromethods in children. At that time I ran a large series of bloods with the microstandards and the micromethod to see how it worked out. I felt that if a good technician who is doing good work consecutively checks up closely on blood sugars in the laboratory he is doing good work with the micromethod. But if there happened to be a different technician there would be discrepancies as high as 40, 50 and one or two 60 per cent, when using the micromethod. That is the danger of trying to go into highly specialized work which requires close control by a person who is trained for that particular thing.

I think you will do a great deal more harm than good in trying to run blood sugars in some such way if you are not equipped for it properly, or if you have no facilities for controlling your results.

CONTROVERSY AND PREJUDICE CALLED METHOD OF SCIENCE

Science, the search for truth, is advanced by indulgence in personal prejudice and scientific controversy properly checked by persistent self-criticism, Professor Edwin G. Boring, director of the Harvard Psychological Laboratory contended in his presidential address before the American Psychological Association. Prejudice and controversy are considered by Professor Boring to be symptoms of the same driving force that makes men invent and discover.

"The history of science is full of illustrations of the most violent and seemingly unreasonable controversy that have obscured the truth for long periods and only eventually led to established fact," said Professor Boring. "Mesmer's discovery of mesmerism (or hypnotism) is a case in point and much can be said in favor of Mesmer, who is generally disregarded as a charlatan. John Elliotson's rediscovery of hypnotism half a century later is a similar case where personal prejudice blocked the acceptance of discovery."

"Since science is supposed to seek the truth, it would appear that its efforts should be directed toward the elimination of bias and personal prejudice wherever these factors enter into the formation of scientific conclusions. However, it appears that the greatest scientists are often the most prejudiced in maintaining their personal views, and that the personal dynamic urge that leads to violent and personal controversy is also a symptom of the driving force that makes men scientifically productive. This fact of dynamic psychology makes it appear at first as if scientific progress must depend upon individual prejudice and as if scientific truth therefore would always transcend the individual and become, after controversy, the property only of those who have not contributed to its discovery."

Professor Boring observed that all new scientific movements are controversial in their beginnings. At the start they are not positive but negative.

"Scientific psychology itself began as a reaction against philosophical psychology," he said. "The newest movements, like Gestalt psychology in Germany and behaviorism in America, exhibit mostly this negative side. Scientific movements are therefore great prejudices that sometimes stimulate progress and sometimes prevent it. The question arises therefore as to whether movements of this sort, which are generally looked upon as constituting the mile-stones in scientific advances, might not hinder progress as much as they encourage it."

The personal bitterness that hinders scientific progress will be removed, Professor Boring declared, as soon as the mental conflict essential to research is recognized and controlled. He advised psychologists to develop dissociation of personality so that after allowing personal prejudice to stimulate research, self-criticisms can be made to apply the proper checks.—Science Service.

IRITIS, IRIDOCYLITIS AND PROLAPSE OF IRIS IN MODERN CATARACT SURGERY

Iritis, iridocyiitis and prolapse of the iris in modern cataract surgery, its prevention and treatment, has been studied by Lloyd Mills, Los Angeles. It is his opinion that the treatment of the incision in cataract surgery until recently has been out of line with the treatment of all other presumably clean operative wounds in which the fundamental practice is full suture of the wound in order to prevent infection and to restore normal relations. The failure to suture these operative wounds of the eyes has been the greatest single means of infection from without and of extrusion of the intra-ocular contents, with their serious inflammatory and visual sequelae. Covering of the wound by a narrow but complete flap of conjunctiva, formed during the incision, or performed, fully closed over the sclerocorneal wound and securely maintained there by an average of five sutures, placed with regard to individual wound peculiarities, is preventive of these disasters in modern cataract surgery.—Journal A. M. A.

THE SHRINE AT LOURDES

HENRY R. CARSTENS, M. D.
DETROIT, MICHIGAN

During a recent visit to various clinics of Europe, I took occasion to visit some of the older or otherwise unusual medical institutions of the continent. There are a large number of these which are of interest to the physician. Some of the hospitals are of great antiquity, either as regards the early establishment of an endowment or the actual age of the hospital buildings. One institution though of comparatively recent origin, offers much of peculiar interest to the medical man in another respect. This is the Shrine at Lourdes. The illustrations and the following brief notes are a simple recountal of what the passing traveller may observe, no attempt being made to discuss the medical aspects of the cures claimed for the waters of the spring.

Lourdes, formerly a sleepy provincial town of France, came suddenly into prominence some seventy years ago, and since that time has become world famed, now being the objective of pilgrims from every land. Charmingly situated in the valley of the Gave de Pau (a river about the size of the Huron at Ann Arbor) it lies in southern France near the Pyrenees, about twenty-five miles distant from the city of Pau, which is such a delightful excursion centre for the whole Pyrenees region. Its present population is about 10,000, but the number of visitors during recent years has run over 800,000 annually. These pilgrims come from all over the world and a large proportion of them are the sick and maimed seeking the miraculous healing effects of the water.

Illustration No. 1 gives a fairly good view of the region of the Shrine. In this picture you will note that the actual grounds, churches, etc., are in the upper right part of the picture. The buildings to the left are mostly hotels and similar buildings lying on both sides of one of the streets leading up to the Shrine. The business centre of the town lies below the lower part of the picture and in general resembles that of other small French towns. The grounds to the right form a charming approach and parkway to the Shrine and during the busy season are thronged with pilgrims. Unfortunately, I visited Lourdes in April, at which time there were comparatively few visitors. The greater number of visitors come to the city during the summer time, reaching the maximum in August. At times special trains are made up in various countries of the continent and the British Isles, bringing large groups of pilgrims to the Shrine. These often include special hospital cars, staffed by physicians and nurses.

The history of the Shrine is very interesting and I transmit without comment a brief outline as given by the local historians. The story starts with the apparitions seen by Bernadette Soubirous. Bernadette, a rather frail child, was born January 7, 1844, of poor, though respectable parents. It was in 1858 when Bernadette was 14 years of age that she saw Our Lady of Lourdes.

The first appearance took place on February 11, 1858. Bernadette was playing in the valley of the river. You will note in illustration No. 2 that the valley of the river is quite low with fairly steep banks and bluffs. In the rock was one good sized cave which the inhabitants called the Massabielle. Bernadette was gathering sticks near this hollow when she heard a noise like a gust of wind, and looking toward the crevice in the rock she saw a "Lady" dressed in white with a rosary on her right arm, beckoning to her. Bernadette was frightened, fell to her knees, and tried to make the sign of the Cross, but her arm felt paralyzed and she was unable to do so until the "Lady" did so, and Bernadette finished her prayers. On later occasions Bernadette saw the "Lady" frequently, there were a total of eighteen apparitions. At first these occurred almost daily, but later less frequently, the last one taking place on July 16th.

It might be remarked here that Bernadette's education was very limited; she could neither speak, read nor write French, she spoke only the local Lourdes dialect, and all conversation was carried on in this tongue. At the various appearances, there took place more or less extended conversations. On the date of February 25th the "Lady" said, "Go drink at the spring and wash yourself there." Bernadette went to the depths of the cave, scratched with her fingers at the earth and a spring gushed forth. This is known as

* Dr. H. R. Carstens in the spring and summer of 1928 toured Western Europe in his automobile. He has seen a number of interesting places, one of which he here describes. Dr. Carstens was Chairman of the House of Delegates at the last annual meeting of the Michigan State Medical Society.

General View of Lourdes Arch. du T. C. F.

the Miracle of the Spring. At a later date Bernadette was given the instructions, "Go tell the priests they must build a chapel here." On numerous occasions the girl asked the figure who she was, but never received any response until the date of March 25th, when she again asked the "Lady's" name. The "Lady" looked to Heaven and said: "I am the Immaculate Conception."

Bernadette's later life was rather short. She had always been a weakly child, suffering much from asthma. In 1866 the Bishop of Nevers suggested to her the idea of entering the congregation of the Sisters of Nevers, which she later did, taking the name of Sister Mary Bernard. She died April 16, 1879, at the age of 35 years. She was later canonized.

The first miracle was recorded as having taken place in 1868, at which time a quarry man used the spring water as a lotion, and recovered the sight of his right eye, which had been without vision for twenty years as the result of an accident.

About this time workmen canalized the spring and hollowed out a large basin. This has since been further rebuilt, so that only a very small stream of water is running in the cave itself, the larger part of the water flowing into reservoirs for use in the baths, etc. The flow amounts to about 50,000 liters per hour.

The illustration shows very well the large basilica which was built over the cave in 1871. Below and to the front of this is the Rosary church, underneath are the crypt and numerous chapels. In the second illustration it will be noted that the pilgrim may either pass up the serpentine stairs to the church and chapels, or he may pass to the right on the walk which forms the embankment of the river, to the baths and the grotto. You will note a group of three arches. These are the entrances to the baths; a little further to the right (obscured in the picture by foliage) is the cave itself. The grotto is protected by a grill with doors so that the pilgrims may enter and pass through the cave. The main part is about twelve or fifteen feet high, about twenty-five or thirty feet wide, and extends possibly twenty feet into the rock. Directly above and to the right of the main opening is the smaller crevice in the rock where the apparition originally appeared. In this is now found the statue which was presented in 1864. Underneath are inscribed the words of the Virgin as uttered in the local dialect, "Que soy era Immaculada Councepcion." On the left wall of the main grotto are hung numerous crutches discarded by the lame who were healed by

the sacred water. In front and facing the grotto are several rows of benches.

It is unfortunate that in such solemn surroundings one must receive warnings

The Shrine of Lourdes Arch. du T. C. C.

of human frailty. A somewhat incongruous note is struck by various signs posted in the immediate neighborhood, among which I noted the following (translated):

"Entrance."

"Offices."

"Sacristy."

"One is requested to preserve silence."

"It is forbidden to put your feet on the taps."

"Watch your pocketbook."

"It is forbidden to eat your lunch on these benches."

I was told that there is a medical committee which investigates and confirms any cures which may take place. Visiting physicians have the privilege of participating in this work for purpose of confirmation. As said above, there were very few pilgrims at the time I visited Lourdes and I had no opportunity for noting any of the recoveries, of which so many have been ascribed to the sacred water. It is stated that in 1924 a total of 800,000 pilgrims came to Lourdes, of whom over 13,000 were sick, 15 confirmed cures were recorded. A number of medical reports have been published. A recent one* reports 20 cases in one year, including such conditions as peptic ulcer, cancer of pylorus, cancer of face, Pott's disease (three cases), pulmonary actinomycosis and tuberculosis, etc.

As there is such a tremendous floating population, the city is well supplied with hotels, and there is ample provision for the care of the sick in hospitals and rest houses. There are a very large number of religious institutions in the town and neighboring country; a Dominican Monastery (10 miles out), an orphanage for girls conducted by the nuns of Our Lady of Charity of the Good Shepherd, Carmelites, established in 1876, an Orphanage of the Sisters of Nevers, and many others.

I am sure that any physician travelling through the south of France will find it well worth while to spend a half day in the city of Lourdes.

* Guerisons de Lourdes en 1926. E. Duplessy. Paris, 1927.

THE DOCTOR AND THE WELFARE FUND

It has been brought to the attention of the medical profession by those putting on the Welfare drive that a small minority of Battle Creek physicians are not contributors to this fund, and, if possible, they would like to know why the doctors generally in the city are not supporting this worthy enterprise more generously.

First, let it be said, that there has been no collusion, and in reaching the decision not to contribute cash to this fund, each doctor has made up his mind in the matter independently.

There must therefore be some reason, quite generalized in its scope, to reach and touch so large a proportion of the profession as it has, when usually the doctor is among the first to come forward to do his civic duty.

The stock in trade of the doctor is his medical service. He has invested in an education, and has equipment, supplies, and automobile to keep up, an da family to support. A conservative estimate points to the fact that the amount of charitable medical service rendered to the poor of this city each year, by all of the doctors practicing here, is equivalent to at least half the amount of the budget being raised this year, or very nearly $44,000. This averages about $1,000 per year for each doctor. Now then when the poor need medical attention the doctor, in four cases out of five, attends to the case, and does not seek pay till after the case has had his full undivided attention. Then it is often discovered that the case is one that cannot pay. It may be a night call to see some sick baby, or the care of a diphtheria case, or a broken leg of the only wage earner in the home, or whatever it is, the doctor is supposed to give his service and does so cheerfully. The doctor usually renders his service first, and his bill afterwards. But in many cases the pay is not forthcoming.

Not so with the merchant. A stranger comes to his store for merchandise, dry goods, clothing or groceries, and unless he pays cash for his goods they are not turned over to him. If an urgent case needs groceries or fuel, the coal dealer or grocer is paid at usual prices for his goods, by the county or some welfare organization. If the doctor cares for a county indigent case, he only gets 50 per cent, often 25 per cent, and in many cases he gets nothing.

The discrimination against the doctor in paying him little or not at all, when the grocer or coal dealer is paid the prevailing prices for his goods creates a feeling among physicians that they are being duped, and in view of some of the above conditions the doctors evidently feel just a little reluctant about co-operating with a system which discriminates against them.—Bulletin of the Calhoun County Medical Society.

XUM

RABIES—A SYMPOSIUM—CLINICAL ASPECTS*

W. M. DONALD, M. D.
DETROIT, MICHIGAN

My attention was first called to this disease about twenty-five years ago, through the occurrence in our midst of a case, (which, of course, ended in death) in the practice of a well known veterinary surgeon of this city, who was himself the victim of the disease. He was the brother of one of our best known surgeons of that day. Bitten by a horse in the course of his practice, he paid no attention to the bite beyond giving it ordinary medical antiseptic care; did not suspect the nature of the trouble in the animal which finally succumbed; and, only after the lapse of many weeks, was himself stricken with the disease, which he was able to diagnose at once and from which he died the horrible death of hydrophobia a few days later.

Twenty-five years ago, the so-called Pasteur treatment for rabies was just coming into vogue, although Pasteur had presented a thesis upon the subject before the Academie de Sciences in France in 1886. Needless to say, in this particular case, the Pasteur treatment was applied, and an intense study of the case was made by numerous physicians, but failure of the treatment at a date so remote from the original injury was only to be expected. I may interject here this thought. Most observers feel that the commencement of the Pasteur treatment later than four days after the bite of a rabid animal greatly increases the possibilities of non-success.

Since that time, my attention has been directed to this subject at varying intervals through my association with laboratory men, veterinarians, and Public Health workers, to all of whom I owe much. From them, I have learned practically all that I know of this disease, the ordinary physician being entirely ignorant of the whole matter.

I may diverge here from my original thought by quoting to you a few extracts which I fancy most of you have disregarded, but which to me were suggestive. They come from both the lay and the medical press, and illustrate the widespread character of this disease, despite the fact that comparatively few now die from rabies.

For instance, in the magazine "Time" of last July 23rd, 1928, the report is given of 19 deaths in Chicago from hydrophobia during the previous ten months. For eight years previous, not a single death had occurred in that city, but, an epidemic springing up, (as it has a disposition to spring up or to flare up at intervals throughout the world) in the ten months mentioned above, over 1,000 Chicagoans had been bitten by rabid dogs, and, of that number 19 died. The Journal mentioned comments upon this by saying, "Never before has there been such a situation in Chicago or any other large American city."

The Detroit Free Press of August 23rd of this year 1928, reports a well known veterinary of Ohio who was accidentally, and, on his part, unconsciously affected by a dog which was not known to be rabid. He died six months later, the usual horrific death of hydrophobia.

Reports of the American Public Health Association for 1927, state that this disease, which before the war had been under satisfactory control in Europe, became widely prevalent after its close, and continued to increase for five years. In the United States, it has been more or less epidemic throughout the country ever since the war, and is only now beginning to be brought under reasonable control by public health measures. According to public health officials, an epidemic which started in southern Illinois in 1923 came to its peak in the vicinity of Chicago in 1927, when, as I said before, 19 Chicagoans died in one year from it. From Illinois, it spread to the adjoining states, and Michigan, as you will undoubtedly hear later from some of the other essayists, has had its share of the disease.

One might add a further word of apology for a presentation of this comparatively rare clinical entity, by the remark that anyone who has seen a case of rabies, and studied its victim throughout the days of torture and horror of impending death, must feel that the sum of mental suffering involved in but a few of such cases is quite equal on the part of both the attendants and the victim to that endured in a multiple of cases from other well known diseases.

Historically, this disease is at least as old as the fifth century before Christ. Democritus and Aristotle both write of it in the fourth and fifth centuries, B. C. Celsus speaks of it frequently at about the time of Christ, while the well known Latins, Ovid, Virgil, Horace, and Plutarch with the Hel-

* Presented before the Wayne County Medical Society, November, 1928.

lene, Xenophon, all refer to it in their writings. Among the moderns, John Hunter and Trousseau have written voluminously of it; while Youatt, the eminent British Veterinarian living about 1850, has devoted many pages to its discussion and to its study. As an aside, it is said that Youatt developed in some measure immunity to the disease, (being bitten six times without injury) but succumbing finally to the seventh bite. Strange to say no reference to this disease is found in the writings of Hippocrates.

In addition to the recent epidemic in Illinois, we have records of many other such epidemics. Greenland had one in 1860, Constantinople in 1839, and Washington, D. C. as late as 1900. Dr. B. J. Killham, state veterinarian, whom you will hear later, reported last year before the American Veterinary Association, that, while no rabies were reported in Michigan in 1922, in 1924 124 rabid dogs were located. He likewise reported that during the first six months of 1927, more rabies were encountered outside the City of Detroit than had previously been reported for the state at large since the beginning of its history. You thus can see that Michigan is not by any means untouched in this rabic danger.

To the verterinarians, the medical profession and the public owes much. They have been keeping the torch burning in the fight against this scourge, while the medical profession has done little to aid its veterinary cousin.

Logically, the disease should be chiefly in the hands of the veterinarians, inasmuch as rabid canine animals are particularly in their purvieu, and are much more common than rabid humans. They should receive the most unstinted help and encouragement from physicians, whose lives, whose work, and whose patients, they are guarding in their work against this disease of the lower animals. The methods utilized by the veterinarians will be referred to later.

As a final allusion to the wide spread character of this plague, and as evidence of the respect that it demands throughout the scientific world, I may here refer to the fact that the Health Committee of the League of Nations called for and carried through an International Conference on "Rabies" in Paris in April of last year. This conference was widely heralded, and at its sitting 57 delegates were present from 26 countries. Such widely separated and unexpected countries as Morocco, Canada, Japan, Portugal, Serbia, China, Soviet Russia, the United States, and, of course, the various European countries, all sent delegates. The conference was important enough to claim for five full days the services of these representatives, of high repute in the scientific world (laboratory workers, cliniicans and veterinarians). At the close of the conference, the conclusions of this formidable array of scientists were incorporated in a voluminous report of 170 pages, which makes most interesting reading to anyone concerned in the study of hydrophobia.

Historically and epidemiologically, we will have to be satisfied with this very cursory discussion of the subject, inasmuch as time and place will not permit of any further consideration of it.

From a public health standpoint, only commendation can be given to the public health service of our own energetic state and city boards of health. For the past several years these boards have been carrying on a campaign for the control of this disease in our canine population, and consequently in our human population. A comparatively recent enforcement of the state law regarding vaccination and revaccination of dogs, with the destruction of all unlicensed and unvaccinated animals, is much to be commended, and has done much to control the situation.

At this time, it might be well to interject a few statements, showing the value of public health control. England had 30 deaths from rabies in the years 1899, 1900, and 1901. She adopted then a rigid muzzling system for all dogs, and practically drove the disease out of the country, so that from 1903 to 1909, no deaths were reported in the United Kingdom from this disease. Prussia, in one decade of the last century, had 1,666 deaths from rabies. She likewise adopted a compulsory muzzling law and quarantine system, cleaned up the epidemic in a year, and is reported since then to be practically free of the disease.

It must be admitted here, of course, that the value of the vaccination of dogs for the control of this disease is still under discussion, but the final report of the Rabies Conference in Paris last year would indicate that vaccination stands only second to the muzzling of dogs in its value in the control of this disease.

Further discussion of this phase of the subject, I again will leave to my conferes who follow.

From a causative standpoint we know that the disease is always transmitted

XUM

through the saliva of the rabid animal or rabid human. Transmission by the latter is, of course, exceedingly rare. Due consideration, however, must be given to the historical fact that a reasonable number of contaminations have occurred from the latter source by accidental abrasions on the skin of the attendants of patients who were particularly violent in their hydrophobic mania.

As is well known, some patients show a most violent tendency, developing the maniacal form of rabies, while others develop the rabies so common in the dog, the "dumb form". Experimentally, contact and communicability are secured in the laboratory through injections from portions of the medulla of the infected animal or of the human. The virus apparently localizes itself almost entirely in either the salivary gland or in the medulla of the infected victim. The determination of the virus in the medulla of rabid victims by many workers in the last century, gave Pasteur his spur and his cue to the development of his epoch-making emulsion of spinal cords for the cure and prevention of this disease. A discussion of this phase of the subject will be left again to one of my esteemed collaborators. Suffice it to say that the world, both lay and medical, acclaims Pasteur and his work in connection with rabies as being monumental, marking a real step in its control.

Etiologically, we know that in North America and Western Europe humans are frequently attacked by rabid dogs, in certain parts of Europe quite commonly by rabid wolves, and in India by equally rabid jackals. The bite of the wolf and the jackal, by the way, are said to be definitely more serious than the bite of the ordinary dog, because these animals spring and bite the face rather than the extremities.

Of course, no two cases of rabies are entirely alike any more than two cases of typhoid fever or pneumonia can be. I have with me the reports of three cases, all of whom died in this city within the last few years. Two of them were contributed by my conferes in the Herman Kiefer hospital, and one I conducted myself through to its fatal termination. In order to save your time and to conserve space, I shall limit my narrative of cases to the one that I cared for myself. This, I think, is reasonably typical, and will give a very clear idea as to the ordinary symptomatology of the disease.

I may say here that I have a fourth case report to which I may be permitted to refer for a moment. A boy aged 11, was bitten on the leg severely September 11th. The dog could not be traced and the boy was not treated with the Pasteur vaccine for 12 days. He then had 18 injections and died October 13, two days after the conclusion of the treatments. The case had been diagnosed clinically as rabies. Autopsy disclosed no Negri bodies in his brain, but positive findings of poliomyelitis.

This last report is introduced to show that rabies is not always as easy to diagnose during life as some have believed and taught.

Post mortem findings, however, seem definitely dependable, what with vascular changes in the brain, the presence of the so-called Negri bodies, and the findings from animal inoculations.

On February 13th last, the patient, Mrs. J. L., a widow and a nurse—age sixty years, 5 feet, 3 inches in height, and weighing 138 pounds, was bitten by a rabid Collie dog on the left leg and the leg badly lacerated. An interesting feature of the case was the fact that this dog had been a family pet, was particularly gentle, had never been known to bite anyone before, and was particularly affectionate with the patient concerned. On account of a story of a rabid dog being in the neighborhood, this dog, who had been accustomed to running freely around the streets and fields in the suburb of Mt. Clemens, where the patient lived, was shut up in the yard and ultimately, for greater safety, tied in a kennel. He was very nervous under restraint, but little attention was paid to this phase. So far as the family knew, the dog had never been bitten by any other dog, either healthy or rabid. On going out to feed this dog on the date mentioned, February 13th last, the patient was furiously attacked by the animal, was knocked to the ground and her left leg badly chewed and lacerated from the ankle to the knee. The victim was just able to roll out of reach of the chained dog and so escaped further injury.

Even then, the fear of hydrophobia did not enter the case because the family felt that the dog had suddenly become maniacal on account of his unexpected and unusual restraint. Hence he was kept chained and under surveillance until the 17th, (that being four days after the attack), when he quietly died. The dog's head was then sent to the Pasteur Institute at Ann Arbor for examination, and the patient, who had been attended and well attended by a local

physician, was brought to Detroit. The various wounds on her leg had been thoroughly washed, free bleeding had been encouraged, and iodine had been thoroughly applied over all the injuries. Sutures then closed the torn flesh. The only criticisms that could be made of the treatment at all was the suturing of the damaged area, thus in a measure preventing free drainage and the non-use of nitric acid for cauterization. However, I think little criticism can be made of the handling of the case by the first physician as the patient was given otherwise every scientific care that medical science knew. Five days afterwards, she was brought to Detroit and I was called to see her. Even then it was not believed that the dog was rabid, but I insisted that, pending the report from Ann Arbor, immediate Pasteur treatments be commenced.

This was agreed to, and, on the next day, being six days following the accident, the treatment was commenced. She was given twenty-one doses of the Cummings Antirabic Vaccine, supplied as usual in batches of seven, by the well known local firm of Parke-Davis Company. There was no reaction from the vaccine, and she made an excellent recovery as far as the local injury to her leg was concerned. Neurologically the patient was, through all this period of three weeks, in a high state of nervous disquietude. She was an exceedingly intelligent, but a highly emotional woman, although the emotions were always kept well in hand. Despite this, she suffered greatly from sleeplessness and from apprehension.

She had worked for a time in the household of Dr. T. A. McGraw, Jr., of lamented memory, and had browsed a good deal in his library, acquiring a reasonably good knowledge of the symptoms of rabies. Hence, she was quick to pick upon various nervous symptoms, such as, numbness and tingling, particularly around the infected leg, as evidence of a threatened hydrophobia. I felt that much of her trouble was psychic, gave her much of my time for psychic treatment and reassurance, and clinched it all with heavy doses of nerve sedatives such as bromides. The result was unexpectedly good, and, in two months, she was entirely herself and went out of town April 21st, for a visit to some friends.

She returned two days later with symptoms of kidney stone in the left side, and with pains so extreme that she required almost heroic doses of morphia for three days. At the end of that time, the pain gradually disappeared, and, for three days, she felt entirely well. Then she commenced to complain of some numbness of the left thigh, that being the injured side. Very shortly following this, dryness of the throat commenced and she said she was unable to swallow. Her throat was slightly congested, and a cold water compress was applied to her neck. Under this water treatment, she became so much disturbed and so wildly excited that the water was discontinued. She told me on my call at this time that she absolutely was unable to swallow anything, particularly liquids. However, realizing her emotional nature, I sat down beside her, talked to her quietly and gave her my assurance that she could swallow if she tried. On my insistence, she proceeded to take a reasonable amount of fluids and soft foods, but said to me afterwards, "That is the hardest thing you have ever made me do, and I did it to please you and to show you that I trusted you when you said that I could swallow." For the next few days, with reasonably satisfactory results, this suggestive therapy was carried out by the nurses and myself, and the patient took medicine and food with little difficulty.

The result of our ministrations made us suspect strongly the condition which the Germans characterize as "Lyssaphobia", meaning a false hydrophobia, due to emotional disturbance. She had no convulsions, and was not in any way violently disturbed. By this time, (the third day), she commenced to develop a frothy discharge from the mouth and throat, spitting constantly in a basin at her bedside. She continued to take her nourishment as before, but, although apparently strong and without any fever or any physical disturbances, she claimed that she was growing rapidly weaker. To us observing her, it seemed that her claims were not substantiated by the physical findings. Two days before she died, the bowels, which had been moving with considerable freedom, suddenly became obstinately constipated. The abdomen became extensively tympanic, and continued thus for two days, or until her death. All this time she was suffering with a progressive numbness and tingling of the extremities, both feet, legs and arms. She had complete control of her muscles, but was apparently weak upon rising or standing or moving about the room. Most of the time she spent in bed, part of the time sleeping, and part of the time ejecting the frothy mucous of which I have spoken.

XUM

The heart was strong; the pulse was good; and the general physical condition from the objective standpoint, outside the weakness, could be regarded as reasonably fair, except that she showed some respiratory paralysis during the last twenty-four hours of her life. Even then the attendants were in doubt as to the real nature of her trouble. The hydrophobia symptoms were so mild, and the emotional condition of the patient had been so severely disturbed, that it was felt that we might be even then contending with a case of false hydrophobia. She died, however, five days after the commencement of symptoms. The post mortem, which was secured through the coroner's office with some little difficulty, gave us, as you will hear later, the diagnosis of a true rabies.

This case, and the previous one, illustrate very well several points. In the first place, the difficulty of a differential diagnosis in personalities of the emotional type, with marked intelligence. Secondly, the differential difficulties in certain paralyses, as in the lad with poliomyelitis. Thirdly, the inefficacy of the ordinary Pasteur treatment in cases with severe laceration unless treatment be begun very early. The wide open avenues for the travel of the virus, as this case possessed, made the action of the vaccine nugatory. It is quite conceivable, judging by investigations on the part of numerous Pasteur Institutes that, had this patient been given a more intensive treatment at the end of the treatment by the ordinary Cummings' vaccine, we might have had a different result. Many observers have claimed a much more marked potency in the *live* virus, and a safe administration in the following up of the ordinary dead virus by such an intensive treatment. However, that is in the lap of the Gods, and the clearing up of this matter must be left to future students and possibly to future generations. Of the two other cases which I have at my disposal—one showed a cell count of 221 on the Sp. fluid just before death, while the other showed a blood count of 23,000 white cells. We did no blood nor Sp. fluid examinations on my patients because of strong opposition on the part of the patient's friends.

I have said nothing about the pathology of this disease, as my friend, Dr. Amolsch, will discuss this at some length. In closing, I should like to emphasize the opportunities that all history, all observations, all knowledge, and all common sense, give us in the elimination of this disease in our western civilization. Judging by the reports, it would look as if the east, notably India and Morocco, had distanced us in a race for scientific control of this disease.

The experience of Great Britain and Prussia, which I have mentioned, and which has been duplicated by other countries since, would lead us to believe that the forced muzzling of dogs and the destruction of all street curs unattached and unclaimed would be of sweeping value. Public health certainly is in the saddle in this year of our Lord, and it behooves us of the medical profession generally to stand solidly back of public health control in this, as in other communicable diseases of this type. Our friends, the veterinarians, are entitled again to our admiration for their constant efforts at the control of this and similar diseases in the animal kingdom.

We physicians owe both these groups our aid, and it is not inconceivable to my mind that a great society like this could do much towards showing the world by its constant support of public health and vetinary measures that a practical elimination of this disease is feasible.

HIGH BLOOD PRESSURE SEEN AS RESULT OF MODERN CIVILIZATION

The high pressure of modern civilization is being blamed for high blood pressure. New evidence in support of this theory was found in a study of average blood pressure rates among natives of Africa.

"I think almost everybody who has been closely associated with the African native will agree that he very rarely can be described as living a high pressure existence," declared C. P. Donnison, late medical officer of the East African Medical Service, in The British Medical Journal. Mr. Donnison compared the average blood pressure of 1,000 healthy males, natives of East Africa, with the standard normal rates for white men at various age levels. Up to the age of 30 years, the rates agree approximately. After that the rates for whites continue to go up, while those for the natives decline. Mr. Donnison found from hospital records that these natives had about the same ailments and diseases as white people, with the exception of those diseases associated wtih high blood pressure. Living conditions among the natives have undergone very little change within a number of generations, but such conditions among white peoples have been revolutionized within the last few generations. Mr. Donnison believes that adjustment to these changes is a factor in the increased blood presure rates.

"I suggest that such differences in the evolution of the two races could be held responsible for the differences in their normal standards of blood pressure; in other words that the greater mental stress required by the ordinary European citizen in his everyday life, as a result of the tendencies of modern civilization, has had its effect upon the physiology as well as the pathology of the race."

XUM

RABIES—ITS ETIOLOGY, PATHOGENESIS AND PATHOLOGICAL ANATOMY

A. L. AMOLSCH, M. D.
(Pathologist to the Detroit Board of Health)
DETROIT, MICHIGAN

Rabies in the human is interesting because of its relative rarity and because there remain several aspects of the disease requiring further elucidation. The great mass of information exists in the foreign literature and it will perhaps not be amiss to briefly summarize the major facts and ideas that relate to the etiology, pathogenesis and morbid anatomy of the disease.

It is well established that the active etiologic agent is a virus capable of filtration through a Berkefeld under controlled conditions of homogeniety, dilution and suction pressure. Gland virus is more readily filtered than is brain virus. Attempts to cultivate the virus removed from living brain tissue have not succeeded. The natural virus is propagated in the lower animals, with the dog playing the important role in dissemination. Evidence is accumulating to indicate the existence of strains, varying mainly in degree of virulence for various species. The laboratory, or fixed virus, is derived from natural virus and differs therefrom by acclimatization to the nerve tissue of a particular species, thereby acquiring a greatly enhanced virulence for that species while becoming attenuated in virulence for other animals, particularly man.

The demonstration of nerve cell inclusion bodies in rabid animals by Negri in 1903 established the rapid, accurate laboratory diagnosis of the disease. The recent International Congress on Rabies found itself unable to judge of the parasitic or bacterial nature of the microscopic structures present in rabid nervous tissue. Three major views are held regarding the nature of Negri bodies, namely:

1. Negri's contention of the specific parasitic character of these structures.

2. Prowazek's view that the inner granules of the Negri body represents the true parasites.

3. Amato and Lentz opinion that the entire structure represents a specific reaction on the part of the nerve cell protoplasm to the presence of the inimical micro-organism.

PATHOGENESIS

Passage of the virus along the peripheral nerves to the central nervous system is generally accepted as the mode of spread in the body. This view is supported by clinical and experimental experience. Section of the nerve above the level of inoculation prevents, or greatly delays, development of the disease. It has been shown that the action of the body fluids is inimical to the virus. Somewhat at variance with this generally accepted notion are the following facts: The virus is frequently present in the saliva three to five days before onset of symptoms, and, in animals spontaneously recovered from the disease, the virus may persist in the saliva for a period of two weeks after the symptoms have disappeared. The virus has been demonstrated in the blood stream and may pass through the placenta to the foetus. The spinal fluid has been shown to be infective. However, under the last two circumstances, large amounts of material must be inoculated, and the incubation period and duration of the disease tend to be lengthened, indicating diminished virulence of the virus.

PATHOLOGY

Statistics indicate that Negri bodies have not been demonstrated in about 20 per cent of cases of human rabies. Under such circumstances resort must be had to animal inoculation, or histo-pathological examination, to corroborate a clinical diagnosis of rabies. Review of the literature on the latter phase of investigation indicate the existence of four important alterations for which authorities have maintained pathognomonic character.

1. Golgi and Schafer stress the importance of nerve cell degeneration and hold that these alterations constitute the most constant and significant feature of rabies.

2. VanGehuchten and Nelis describe inflammatory infiltrative and proliferative changes, associated with nerve cell degeneration in the cranial and spinal nerve root ganglia. These authors maintain specificity of these alterations in rabies.

3. Babes stressed the character of the inflammatory infiltration in the brain and spinal cord, ascribing diagnostic significance to focal aggregations of lymphocytes and glia cells about damaged nerve cells. These foci constitute the so-called "rabic tubercles"!

4. More recently, Krinitsky stressed the importance of the anatomical topography of the inflammatory lesions, showing that the Medulla, Pons and Mesencephalon were the sites of the intense inflammatory infiltration.

Exception to the specificity of any of these lesions have been made and well maintained. It appears, however, that the association of all these alterations constitutes a lesion complex quite typical and characteristic, and may reasonably form the basis for the histopathological diagnosis of rabies.

Three cases clinically diagnosed rabies have occurred during the past 15 months in Detroit. We desire to summarize the alterations occurring in these cases, in none of which could Negri bodies be demonstrated in the human brain.

Case No. 1.—A boy was severely bitten on the face and lip by a dog proven rabid. Anti-rabic treatment was begun 12 days following exposure and the series was completed. The incubation period was 28 days. Duration of the illness was 5 days.

Pathologic findings: Suffused red coloration of the entire grey substance of the brain and cord. Microscopic examination: The fifth and tenth nerve root ganglia showed slight lymphocytic cell infiltration and chromatolysis of ganglia cells. There was a marked inflammatory infiltration in the grey substance of the spinal cord, medulla, pons and mesencephalon, the reaction being most intense in the medulla beneath the floor of the fourth ventricle. Perivascular infiltration, formation of cellular mantels in the endolymph spaces and proliferation of endothelial cells in these spaces featured this alteration. Rabic tubercles were developed about minute capillaries and damaged nerve cells. The cortical and subcortical grey tissue was not infiltrated, the chromatolysis was present. Other visceral changes were negligible.

Case 2.—A woman, about 60 years old, was severely bitten on the leg by a dog which was proven rabid. Anti-rabid treatment was begun 6 days later and completed. The incubation period was 73 days. Duration of the illness was 4 days.

Pathology — Inflammatory infiltration was absent in the cortical and subcortical grey, but was pronounced in the medulla, spinal cord, pons and mesencephalon, particularly beneath the floor of the fourth ventricle. The process was characterized by marked congestion, dilated endolymph spaces which were engorged with lymphocytes and hyperplastic endothelial cells. Aggregations of lymphocytes and glia cells forming rabic tubercles about damaged nerve cells was quite marked. Other visceral changes were negligible.

Case 3.—A child was bitten on the ankle by a dog which was destroyed and not examined. Anti-rabic treatment was begun five days later and completed. Illness ensued 7 weeks following the bite and lasted 4 days. The disease was characterized by flaccid paralysis of the lower limbs. There was no hyperaesthesia, no pharyngeal paralysis, no cerebral excitation and no salivation. Two guinea pigs inoculated subdurally with brain tissue from the child did not develop rabies.

Pathology—The cervical spinal cord and lower levels of the medulla showed inflammatory infiltration involving the anterior horns and the motor areas beneath the floor of the fourth ventricle. The infiltration consisted of plasma cells, lymphocytes and some polymorphonuclear leucocytes. The nuclear stroma was degenerated. There was no endothelial cell proliferation in perivascular spaces and no rabic tubercles were formed.

The clinical features of the case, the inability to produce rabies in experimental animals, and the qualitative and regional difference in the inflammatory process tend to classify the disease as anterior poliomyelitis with bulbar involvement. The history of dog bite and anti-rabic treatment were incidental conditions.

CONCLUSIONS

In rabies the essential lesions are as follows:

1. Infiltration and nerve cell degeneration in the cranial, spinal and sympathetic ganglia.

2. Profound chromatolytic alterations in the nerve cells throughout the brain and brain stem.

3. Profound inflammatory infiltration in the cervical spinal cord, medulla, pons and mesencephalon. Absence of infiltration in the cortex is the rule.

4. Formation of perivascular cellular mantels with proliferation of endothelial cells in the endolymph spaces.

5. Focal aggregations of lymphocytes and glia cells about degenerated nerve cells; the so-called "rabic tubercles".

6. These alterations are characteristic but in no sense specific. The basic laboratory diagnosis must rest upon the demonstration of Negri bodies and animal inoculation.

XUM

BIBLIOGRAPHY

Babes, V., and Jonesco, V. M.: "Lesions des reins dans la rage." Comp. rend. Soc. de Biol. Paris 1909, pp. 723-725.

Fedoroff: "Forms of Hydrophobia in Man." Ztschr. f. d. ges Neurol. u. Psychiatrie. 100, 248.

Hermann, O.: "Die Vererbung der Wut durch die Plazenta." Centralblat f. Bakteriol. etc. Jena, 1925, XCIV, 42

Krinitsky: "Alterations in the Central Nervous System in Rabies." Virchow's Arch. f. Path. anat., 261, 802.

Lentz, O.: "Pathologie und Therapi e der Tollwut.' Deutsche Med. Wchnschr. Leipz u. Berlin; 1910, 36, 1257.

Mogilnitzski: "Changes in the Vegetative Nervous System in Rabies." Jour. Psychology, Neurology and Psychiatry, Moscow, 1923; 111, 78.

A NOTE ON THE METHODS OF PRODUCTION OF THE VARIOUS TYPES OF ANTIRABIC VACCINES*

A. S. SCHLINGMAN, D. V. M., M. S.
DETROIT, MICHIGAN

Pasteur and his co-workers in the brilliant researches which led to the perfection of the first means of preventive inoculation against rabies found that the causative virus was most prevalent in the central nervous system.

On account of the irregularity with which street virus produced the disease they endeavored to stabilize its activity by a succession of passages through monkeys. This method was discarded on account of the high cost of the animals and because the virus became very much attenuated. Using rabbits, it was found that successive transfer by subdural injection led to the exaltation of the virus for these animals so that it produced symptoms of the disease regularly on the 5th day after injection, followed by death on the 7th or 8th. Successive transfer did not alter the time of onset of the symptoms. On account of the regularity with which this virus produced symptoms of rabies in rabbits, Pasteur called it "fixed virus". This fixed virus formed the basis of his preventive treatment and also forms the basis of all modifications which are in use today.

Since the perfection of Pasteur's antirabic vaccine modifications have been made by various workers, the more important ones being as follows:

ORIGINAL PASTEUR METHOD

After rabbits have died from fixed virus infection the spinal cords are removed and suspended in sterile bottles containing caustic potash. By drying the cords in this manner for varying periods of time up to 14 days, different degrees of attenuation of the virus are obtained. The first dose of the treatment consists of an emulsion of cord which had been dried 14 days. The nerve tissue in the last (21st) dose was dried only one day.

According to the Hygienic Laboratory scheme of treatment the first dose was made up of cords dried only 8 days, the last being dried only the one day as in the original scheme.

HOGYES METHOD

Hogyes held the opinion that drying the cords of fixed virus rabbits according to Pasteur's method resulted in an uneven attenuation of the virus. He recommended a treatment in which the virus was unattenuated but in which a variation of dosage was obtained by using different dilutions of the nerve tissue in normal salt solution. Treatment of persons exposed to infection was begun with a dilution of one to ten thousand. The concentration of the suspension was increased as the treatment progressed so that the last dose consisted of a suspension of the nerve tissue in a dilution of one to one hundred.

In most cases, patients were treated with the two foregoing vaccines at the laboratories. When sent out from the laboratories for use by physicians, the nerve tissue was suspended in 20 per cent glycerine containing 0.5 per cent phenol.

SEMPLE METHOD

Sir David Semple, working in the Pasteur Institute of India believed that immunity could be produced with a dead virus vaccine as well as with one which contained the living but attenuated virus. He perfected a method in which the brains and cords of rabbits dead of fixed virus infection are emulsified in an 8 per cent suspension in normal salt solution containing 1 per cent phenol. After incubation at 37° C. for 24 hours this suspension is diluted with an equal volume of normal salt solution resulting in a suspension containing 4 per cent of nerve tissue and 0.5 per cent phenol. After sterility tests have been made and rabbits have been inoculated subdurally to determine that the virus had been destroyed, the vaccine is ready for use.

In this country this form of vaccine has been modified to the extent that the fin-

* Read before the meeting of the Wayne County Medical Association, Detroit, Michigan, December 4, 1928.

**From the Research Laboratories, Parke Davis and Co., Detroit.

ished product contains 2 per cent nerve tissue and 0.5 per cent phenol.

HARRIS METHOD

In the production of this vaccine the cords and brains of rabbits dead of fixed virus infection are dried in a vacuum at 18°C and ground. This was later modified by freezing the nerve tissue with carbon dioxid snow or liquid air, drying in vacuum and pulverizing. The dried material is then sealed in glass tubes and kept in the refrigerator until needed when it is suspended in normal salt solution immediately before injection.

The dosage is based on a M. L. D. which is the smallest amount of dried material necessary to produce death of rabbits from fixed virus rabies. Treatment is usually begun with an injection of 500 M.L.D. The amount is increased daily until the end of the treatment.

CUMMING METHOD

The brains only of fixed virus rabbits are used. When the symptoms of fixed virus rabies are fully developed the rabbits are killed by inhalations of chloroform. The brains are removed with aseptic precautions and ground with sterile quartz sand in sterile salt solution. The emulsion is then diluted to the proper density, strained through bolting cloth and formalin is added. After allowing the suspension to stand at room temperature for several hours it is placed in collodian sacks and dialyzed in running sterile water. A suitable preservative is added after which sterility tests are made on several kinds of culture media. In order to determine that activity of the virus has been destroyed, rabbits are injected subdurally with 0.5 c.c. each of the suspension and are held under observation for 15 days during which time they must remain normal. After these tests have been completed the product is ready for use. Two c.c. are injected daily for 14 or 21 days, depending on the location and severity of the bites.

SINGLE INJECTION METHOD FOR PROPHYLACTIC USE IN DOGS

Umeno and Doi perfected a vaccine, one dose of which is used for prophylactic immunization of dogs. As in the vaccines used in human medicine, fixed virus forms the basis of this vaccine. The brains and cords of rabbits dead of fixed virus infection are ground in a 20 per cent suspension in a solution containing 60 parts glycerine, and 40 parts water containing 1.25 per cent phenol. The final phenol content in this suspension is 0.5 per cent which is sufficient to attenuate but not destroy the virus after the holding at room temperature for two weeks or in the refrigerator 30 days.

Since the first recommendation of this vaccine, it has been modified to the extent that brains from dogs dead of fixed virus infection were substituted for those of rabbits.

Kondo has recommended a vaccine in which the brains of dogs dead of fixed virus infection are ground in a 50 per cent solution of glycerine in water, the solution containing 0.5 per cent phenol. Attenuation of the virus is obtained by incubation at 37°C for 3 days.

Dead virus vaccines are also produced by the original Semple method using dogs' brains and by a modified form of this method in which the nerve tissue content is 8 per cent.

Five c.c. of each of these various vaccines is recommended as a prophylactic dose to unexposed dogs weighing from 10 to 40 pounds. The immunity conferred is generally conceded to last about one year.

REFERENCES

1. Infection, Immunity and Biologic Therapy: Kolmer—3rd Ed., 1924, p. 787.
2. Hogyes: Ann. de l'inst. Past. 1888, II, p. 133. 1889, III, p. 449.
3. Harris, D. Z.: Jr. Inf. Dis., 1912, 10, p. 369; Jr. A. M. A., 1916, 67, p. 923.
4. Semple, Sir David: Brit. Med. Jour., Sept. 13, 1919, p. 333; Sept. 20, 1919, p. 371.
5. Cumming: Jr. Inf. Dis., 1914, 14, 1, p. 33.
6. Jr. A. M. A.: 1924, 83, 13, p. 1001.
7. Umeno and Doi: Kitasato Arch. Exp. Med. IV (1921) 2, p. 89, Abst. Jr. A. V. M. A. CIX (1921) N. S. 12 (6), p. 775.
8. Kondo: Vet. Med. XIX (1924) p. 592.

TWO OUTSTANDING NEEDS ARE FAMILY DOCTOR AND RESEARCH

Man's two big needs are the family doctor and research, declared Dr. Joseph Colt Bloodgood of the Johns Hopkins University Medical School, at the Public Health Service conference on influenza. Man needs his family doctor when he is well to tell him how to safeguard his health. At the same time he needs research to enlarge the doctor's knowledge of the cause, cure and prevention of disease. Research however, requires money, stated Dr. Bloodgood, and the money for research on influenza, infantile paralysis, cancer and other diseases of man should come from Congress. The present epidemic presents an opportunity for seeking a Congressional appropriation for such purposes, while public opinion is aroused by the actual presence of a disease which scientists have no known means of checking. Dr. Bloodgood presented to the conference a resolution petitioning Congress for more money for scientific research. —Science Service.

XUM

THE VETERINARY VIEW OF RABIES IN MICHIGAN*

B. J. KILLHAM
LANSING, MICHIGAN

In examining the records for the past six years, it is noted that rabies has developed from nothing to a widespread, everpresent menace. The report for 1922 makes no reference to rabies whatever. In 1923, the disease was just casually mentioned. The following year 124 rabid dogs were located and 18 townships and one county were placed under quarantine. From 1925 to 1927 there was a slight decline in the incidence of rabies, but during the present year more rabies has been encountered outside of the City of Detroit than had previously been reported for the state at large since the beginning of its history. Since January 1, 1928, 52 county dog quarantines have been placed. Some of these were renewals, but 34 different counties were involved. A county quarantine is not placed unless it is demonstrated that proven rabid dogs have been at large in the county and have bitten animals or persons.

Acting under legal authority, it is customary when rabies has been demonstrated, to place a quarantine for an initial period of 90 days. We no longer confine the quarantine restrictions to townships, but use the county as a unit. The earlier quarantines required that all dogs in the territory affected be muzzled, chained or otherwise properly confined on the premises of the owner or keeper. With the advent of the single injection vaccination and the favorable reports covering the use of this method of treatment, a change was made to provide for vaccination in lieu of restraint.

OBSTACLES

It is very probable that any rabies control campaign involving the dog as it does, will be confronted by all the obstacles presented by perverse members of the human family in other disease control projects, plus interference attributable to sentimental attachment to man's best friend.

Kennel Clubs, and so-called humane enthusiasts, have offered objections to vaccination and quarantine for reasons not entirely obvious. Cranks who can orate hours in behalf of the dog, but are apparently unconscious of the rights and privileges of the child, are all too numerous.

CONCLUSIONS

Briefly summarizing the rabies situation as it applies to Michigan, the following conclusions are presented:

The stray dog should be eliminated, of course, but the human factor and not the dog is the most difficult to govern and anticipate, and much work of an educational nature is necessary to neutralize or bring about the control of the demonstrated vagaries.

Rabies, in common with many other infectious diseases, follows the lines of traffic.

The disease has developed from practically nothing to a condition involving 34 counties (nearly one-half of the state) in six years. Despite a dog law, city ordinances, rabies quarantines, certain responsibilities for the control of dogs placed upon counties, and average enforcement of the various restrictions, rabies has spread and is more prevalent than ever before in the history of the state.

There is no proof to indicate that the single injection vaccination as a prophylactic is not reasonably effective. A vaccination clause makes for easier and more complete quarantine enforcement. The outstanding objection to vaccination relates to the proper identification of treated dogs running at large.

The movement of susceptible dogs in automobiles must be checked if rabies is to be controlled. Data show that approximately 25 per cent of the tourists' cars contain dogs. If a dog becomes rabid enroute, it is almost sure to escape or be liberated.

Dog days are a delusion. Most of the rabies occurs during the late winter and spring. A seasonal decline is now in evidence.

The chief obstacles to rabies control are presented by perverse and unreasonably sentimental persons, kennel clubs, misguided humane enthusiasts, plain cranks, a very few physicians and veterinarians, and some "center of the road" officials.

* State Veterinary Department.

XUM

RABIES

HERBERT W. EMERSON, M. D.
(Director, Pasteur Institute)
ANN ARBOR, MICHIGAN

I have been requested to discuss rabies, particularly the treatment thereof, and I am very glad of this opportunity to do so.

Rabies, I believe, is even an older infection than Dr. Donald's history indicates. It is very probable that Aketon, son of Aristeus, died of rabies about thirteen centuries B. C.

Because of the long time that this disease has been recognized, because of its long period of incubation, because of the bizarre character of its symptoms, and its rapid course to a fatal termination, this disease has fallen heir to more superstitious beliefs and to more misstatements of fact than any other infection.

Rabies has been on the increase throughout the United States since the war and particularly during the past four years. This is tremendously unfortunate and is a discredit to our civilization for the control of the syread of this infection is one of the easitest with which we have to cope.

It is difficult and sometimes impossible to enforce proper restrictions on dogs because of the ignorance and carelessness of the public, and because of the shortsightedness and selfishness of certain organizations, chief among which are the "Kennel Clubs." These organizations claim to be interested in dogs, but are usually dominated by those members making money out of raising and selling dogs, or journals about dogs. These organizations have been the greatest obstacles to the enforcement of proper regulations.

All animals are susceptible to rabies. Dogs, because of their nature and their close association with man, are the chief means of infecting humans.

England and Australia have proven that the control of the spread of this infection among dogs stamps out the disease. Australia is one of the few countries that has been free from rabies. This is due to rigid quarantine regulations on dogs entering the country. England has definitely proven that properly enforced muzzling and leashing laws are sufficient to stamp the disease out of the country. But people must be educated to the need of such restrictions and to their efficiency.

The high tuition we are paying for this education is hundreds of human lives and thousands of dogs needlessly sacrificed to this dreaded disease.

When a patient comes to a physician as the result of having been bitten by a dog or a cat, cauterize the wound thoroughly with nitric acid. If the wound is anywhere other than on the face or head, direct that the animal be securely confined and observed for 10 days. It must not be killed. If the animal is normal at the end of 10 days there will be no danger to the patient so far as rabies is concerned. Should the animal show symptoms of rabies while under observation, start Pasteur treatments at once.

If the bite is on the face or head and there is rabies in the community, start Pasteur treatments at once and confine and observe the animal as above. If the animal is normal at the end of 10 days, stop the Pasteur treatments.

The reason for the difference in methods of procedure is due to the fact that the incubation period or period from time of exposure until symptoms of the disease develop in an average of three weeks in bites on the face and an average of seven weeks in bites on the body other than face or head. This incubation period in rabies varies markedly, the shortest recorded is eight days and the longest is three years. The Pasteur treatments should be completed, where possible, before symptoms of the disease develop, that is, before the virus reaches the brain.

It is very important for the physician to emphasize that the animal causing the wound must not be killed, but must be confined and observed for 10 days. If the dog has rabies so that it can communicate the disease, the virus must be present in its brain and after the virus reaches the brain the disease progresses rapidly to a fatal termination.

NEED MORE DOCTORS TO TREAT MENTAL DISEASES

A great shortage of physicians who are familiar with psychiatry exists in the United States, according to recent testimony of Dr. William A. White, superintendent of St. Elizabeth's Federal Hospital for the Insane, before the House Committee on Appropriations.

The number of physicians in the country, Dr. White said, approximated 149,000, of which only 2,000 were thoroughly familiar with the treatment of mental diseases.

Against this figure, he put the fact that "there are 800,000 beds in all the hospitals of the country. Four hundred thousand, or one-half of these, are in mental-disease hospitals."—Science Service.

A STUDY OF 278 CASES OF GENERAL PARESIS TREATED WITH MALARIA AT ELOISE HOSPITAL, ELOISE, MICH.

JOSEPH E. BENNETT, M. D.*
I. L. POLOZKER, M. D.**
IRA M. ALTSHULER, M. D.***

More than two years have elapsed since the first case of general paresis has been treated with malaria at the Eloise Hospital. Although it is still premature to draw any definite conclusions, one nevertheless feels that a report should be made at this time, especially in view of the fact that our institution was the first in the state of Michigan to inaugurate Wagner v. Jauregg's method. It was a rather adventurous thing to get malaria blood, as there was no malaria patient in the immediate vicinity and a fresh specimen was needed. An aeroplane was sent to Mayville, Illinois, from where Malaria blood was brought. Our first patient was injected 3 hours and 15 minutes after the specimen was obtained.

That the remissions in general paresis have something to do with malaria has been noted a long time ago. The story is that a certain "generous gentleman" not knowing what to do with his swampy land, donated it for an insane asylum. Paretics, of this asylum upon contracting malaria, usually showed improvement. Since the introduction of malaria as a therapeutic agent in general paresis by Wagner v. Jauregg in 1917, numerous and interesting reports have appeared in our country as well as abroad. Although the first step towards this epochal discovery was made by Wagner v. Jauregg as far back as 1887, yet it has taken these many years to introduce his method.

Before the use of Malaria in cases of general paresis, various other remedies have been tried. Fevers have been artificially produced in the expectation of provoking remissions. Among other remedies were:—Autenrich's ointment, (Ungt. tartari stibiati, which was rubbed into the head), injections of tuberculine, typhoid, rat bite poison, staphylococcal vaccine, milk, etc. Until 1917, however, when Wagner v. Jauregg inoculated his 9 paralytics with malaria, the scientific world was very little informed of or interested in his experiments. In 1919 the savant was so well pleased with and convinced of the efficiency of his method that he soon made wide use of his treatment and also found enthusiastic support in others. At the present time no one questions the efficacy of the malaria treatment, not only from a standpoint of clinical improvement but also healing of old inflammatory processes. This has been recorded from various sources. To quote "Hoche[1]: "There is little doubt that the younger generation of physicians will be pleased to witness the time when general paresis will become a matter of historical interest."

It may be in place to briefly consider the pathological anatomy of general paresis, since our terminology still contains such terms as "softening of the brain," which one finds on hospital charts and occasionally in literature.

Little did the psychiatrist, Parchappe, who in 1838 spoke of "ramollissement de la couche corticale"[2], realize how much anxiety and discomfort his word "softening of the brain" would cause the laity and how much confusion it would create among physicians. It is the duty of the medical man to abandon this definition not only because it is false in a pathological sense, but also for purely humanitarian reasons. Patients and their relatives are actually driven mad when the physician mentions the word "softening of the brain."

The latter term conveys a message of hopelessness, which, in the light of our present day knowledge, is unwarranted. We now know that there is no such thing as "softening of the brain." Macroscopically one finds atrophies of the cortex, especially those of the frontal lobe, while microscopically there is a proliferation of the glia cells and loss of ganglia cells. (This process is especially noticeable in the frontal lobe and Insula Reilii). The blood vessels become tortuous and one finds perivascular accumulations of round cells—the typical "plasma cells," and iron pigment is found in the adventitial sheaths of the cortical vessels[3].

One who wishes to experiment with a new remedy must constantly keep in mind the following maxim: "Primum non nocere". The next thing to be remembered is what should one expect: "quoad vitam and

**Dr. I. L. Polozker Graduated from the Detroit College of Medicine 1897; Chief of the Staff and Psychiatrist of Eloise Hospital; Attending Psychiatrist at Receiving Hospital.

* Dr. Bennett, Graduate of the University of Michigan 1890; Superintendent of Eloise Hospital.

***Ira M. Altshuler, Psychiatrist Eloise Hospital.

XUM

quoad sanatoinem." In connection with our problem a natural question arises: "What happens to a patient who is left without any treatment or to one who is treated with the usual anti-syphilitic agents?" As we know the duration of life of such a patient is approximately 2½ years from the onset of the first mental symptoms.

Spontaneous remissions, within a few days are known. However, such instances are rare and should not be taken into consideration, because of the inability to predict such a result. The histopathological picture in spontaneous remissions is entirely different from that caused by malaria treatment. In the former the inflammatory process in the brain remains stationary, while in the latter the inflammation disappears, and to some extent repair of the brain occurs[4].

Although the mortality rate of those treated with malaria is still high, that of the untreated is almost 100 per cent. Thus it remains for one to use radical methods and console himself with the saying of Hippocrates: "For extreme diseases, extreme methods of cure are necessary."

In the use of malaria in general paresis one must not forget that results do not depend on treatment alone; the constitution and state of health of the patient should be taken into consideration, for a disregard of the latter always tends to increase the mortality rate. One must admit that it is exceedingly difficult to determine in advance the outcome of the treatment. Although one is compelled to be guided by general rules, certain points should always be kept in mind.

In our own experience senile or cachectic patients, those with extensive arteriosclerosis, or decompensated hearts, were considered as poor risks, however, the following case shows the falacy of dogmatism. A patient, age 41, (case No. 21, Mr. R. O'B.) was admitted to this hospital in April 1926. Among other findings the report of the cardiologist was: aortic and mitral insufficiency, myocarditis, and enlargement of the heart. Recommendations: A very poor risk. As the patient and relatives insisted on his being treated, an inoculation followed and the patient made an uneventful recovery, soon returning to work.

The supervision of the patient during the illness is very important. Close watching of each complication and an immediate intervention is imperative. A nurse should be in constant attendance.

Much thought has been given to the action of malaria. It has been noted that paretic patients suffering from an illness in which the fever is high and prolonged (typhoid, typhus, etc.) not infrequently show great improvement or even a cure: the result was usually attributed to the sustained fever. Such a fever affects only the reticulo-endothelial system and can be of benefit only as a local stimulus to the brain cells proper. There are cases reported where cures have been noted without a rise in temperature[5].

It is not likely that the spirocheta, which lies in the brain, is killed by the fever but the fever, perhaps, stimulates the nerve tissue, causing it to react. That the above reaction takes place in the brain only is evident from the fact that no similar reaction is observed in the spinal cord. Even under normal physiological conditions a difference of temperature in various organs exists. A center for the regulating of heat in the brain, although frequently mentioned, has never been found or placed, and some authors[6], doubt the existence of such a center at all.

Putting the heat center on a throne, as Professor Sahli says, is not in accordance with clinical observations. The regulation of body temperature of each organ is a highly complicated process which is influenced by various factors, as for instance, the blood supply of each organ. The malaria (as well as the recurrens and typhoid fever) probably raises the temperature of the brain, which in turn, stimulates the reorganizing forces.

One more thing should be remembered that by injecting malaria blood, one not only injects plasmodiae, but also blood of highly strong potentiality.

Austrian writers of late raised the question of the contagiousness of paresis[7]. The spirocheta, as we know, is found in the brain; there is therefore a probability that it may coexist in other organs, and perhaps, in the blood as well. This has as yet never been disproven by animal experimentation. If that should be the case we also inject new spirocheta into the patient (by injecting paretic convalescent malaria blood).

Up until November 1, 1928, we have treated at our hospital 278 patients, (the youngest of our group being 17 years, the oldest 56). Among those were: 208 males; 70 females. Because, the treatment in the male and female department was conducted independently, we shall cite them separately. Inasmuch as the type (all ad-

XUM

vanced cases) of patients, principle of treatment and care were the same, one gets some advantage from such separate observations. Thus the total number of men was 208:—

Improved	68 (or 33%)
Unimproved	30 (or 14%)
Worse	1 (or ½%)
Paroled as completely cured	27 (or 13%)
Cured, but waiting to be taken home	5 (or 2%)

The mortality rate was as follows:

Death during treatment	25 (or 25%)
Death after treatment 1-3 mo.	7 (or 3%)
Death after treatment 3-6 mo.	3 (or 1½%)
Death after treatment 6-9 mo.	4 (or 2%)
Death after treatment 9 mo.-1 yr.	0 (or)
Death after treatment 1-2 yr.	1 (or ½%)
Paroled as slightly cured, but returned	3 (or 1½%)
Paroled as cured, not returned	7 (or 3%)

The females were treated in 4 series:

SERIES NO. 1

Number of patients treated	46
Number of patients died	11
Number of patients died during treatment	4
Number of patients died from 3-10 mo. after	7
Uumber of patients still in hospital improved	5
Number of patients paroled improved	8
Number of patients still in hospital slight improvement	11
Number of patients still in hospital unimproved	11

SERIES NO. 2

Number of patients treated since September, 1927	10
Number of patients died during treatment	1
Number of patients convalescing from treatment	9
Total number of patients treated since May, 1926	56

SERIES NO. 3

Number of patients treated	10
Number of patients died during treatment	4
Number of patients improved	4
Number of patients unimproved	2
Total number of patients treated	66

SERIES NO. 4

Number of patients treated	4
Number of patients died during treatment	1
Number of patients improved	0
Number of patients unimproved	3
Total number of patients treated	70

Thus it reads:

Total number	70
Total number improved	23
Total number unimproved	30
Total number died	17
Number of patients paroled	9
Number of improved patients still in hospital	14

The fact that 41 patients have been paroled and can take care of themselves is not only a gratifying factor in itself, but is of economic value to our public institution. A great percentage of patients, (those who were not paroled) who remain in the institution can take care of themselves now, who were helpless before.

In our treatment, in the beginning, we used the intravenous route to introduce the malaria blood. This avenue, however, proved to be dangerous. Intravenous injections of malaria, as a rule, caused a sudden, much more rapid onset, the course was more irregular and severe and the mortality high. We then began to use intramuscular injections, which proved to be less dangerous, showing a smoother and slower onset. The fever when developing slowly gives the patient a chance to get accustomed to it. From 2-2½ ccm. of blood were used.

According to Castellani and Chalmers[8], the period of incubation of naturally acquired malaria (benign tertian) ranks from 9-12 days. The incubation period of artificially induced malria is somewhat different and varies with the method of inoculation. Intravenous, intramuscular, subcutaneous, or by mosquito bite, have various incubation periods. In our experiperience they varied from 7-27 days.

In our cases malaria, besides causing elevation of temperature, rapid pulse, chills, and malaise, also produced vomiting, enteritis, herpes labialis, abscess of the scrotum, etc.

The enlargement of the spleen was a frequent complication. The swelling of the spleen appeared as early as the 6th day and as late as the 16th day. The highest fever observed in our group of patients was about 107.8; the lowest 99.4. The chills lasted as long as 3 hours and 45 minutes and as short as 15 minutes.

In the beginning we did not pay any attention to the number of chills unless some contra-indication to their continuance appeared, but in our series the number of chills ranged from 1-17.

We could not see any relationship between the number of chills, height of temperature and the outcome of the treatment. Persistent vomiting, jaundice, heart complications, and sudden fall in the blood pressure, were always alarming signs and an interruption of the cure proceeded.

As usual a complete medical, mental and serological examination preceded each inoculation. The diagnosis was decided on the merits of neurological and laboratory findings.

Our laboratory investigations included the following:—

SPINAL FLUID	BLOOD AND BLOOD COUNT
Color—sp. gravity	Kahn
Pressure	White
Coll. gold	Red
Mastic	Diff. Poly S. M.—L. M.—E.
Globulin	Hg.
Albumin	
Sugar	
Cell Count	
Kahn	

URINANALYSIS

Sp. gr.	Indican	W. B. C.
Color	Blood	Crystals
Sugar	Bile	24 hr. intake
Albumin	Casts	24 hr. output
Aceton		

BLOOD CHEMISTRY	RENAL FUNCTION
Nitrogen	
Sugar	P. S. P.
Uric Acid	
Creatinin	

XUM

Immediately after the end of the treatment the above examinations were repeated and check-ups made every 3 months. The reason for this procedure was to watch the changes in the cerebrospinal fluid, which usually occurs only after 4-6 months.

In Ferrato and Fong[9], we find that the first thing which improved in the spinal fluid following the malaria treatment was the pleocytosis. The amount of cells were reduced within a few days following the treatment. It is not the same with the globulin, spinal Wassermann, and colloidal gold. The latter showed more resistance to the malaria treatment than any other spinal fluid reactions. We can confirm these findings as in our patients similar observations were made. The diminution of the cells in the spinal fluid indicates that the inflammatory process is subsiding and is a valuable sign. We recommend to watch for this sign, and periodic cell counts should be made regularly. Ferraro and Fong also attempted to find parrallelism between the clinical and serological improvements. They failed, however, to see such a relationship. Our observations also coincide with their findings.

The relationship of a cure to the increase of body weight, as studied by Bunker, Jr., in which he claims that 80 per cent of the cured gained in weight, has not been investigated in this institution.

The first neurological improvement manifested itself in disappearance of tremor. The speech and co-ordination were also among the first things to improve. In order to be able to watch the changes in the mental condition, we divided our patients into A. B. C. groups, as accepted by Watson W. Eldridge's Committee[10].

The classification into A. B. C. mental groups, however, did not prove to be very practicable.

If the patient was able to resume some sort of work (not necessarily his previous occupation), behaved, was oriented, and showed interest in life and surroundings we considered him as mentally improved.

Lately, malaria treatment was also advocated as a prophylactic in general paresis. We do not, however, possess any experience along this field. At this time, may we be permitted to express our utmost thanks to Dr. Squires and Dr. C. Layton, for their faithful work and hearty co-operation in connection with this study.

SUMMARY

1. Malaria in the treatment of paresis is the best of all known at present, showing distinct healing tendencies in the brain cells.

2. Before a patient is submitted to treatment he must be physically adjusted, so that he can better stand the treatment, the care during treatment is of paramount importance.

3. The spinal cell count is a fairly safe indicator of the progress in the treatment.

4. The intramuscular route is the safest, the number of chills as well as the height of fever has no bearing on the outcome of treatment.

5. It is highly probable that neither the fever nor the malaria plasmodiae itself, but the reactivation of the old luetic process through the introduction of foreign paretic blood with the malaria, act(at an elevated temperature) as a definite curative agent.

LITERATURE

1. Seigfried Hecht: "Archiv fur Psychiatrie and Nervenkrankrankheiten; (Berlin, 1927. Band 8-S. 133.)
2. Robert Bing: "Lehrbuch des Nervenkrankheiten"; (Berlin, 1921. S. 282.)
3. F. Proescher and Albert Arkush: "The Journal of Nervous and Mental Diseases," (Vol. 67, No. 1, 1928, Page 21.)
4. Walter L. Brutsch: "Zeitschrift fur die gasamte Neurologie and Psychiatrie." (Berlin, Band 110. Page 713.)
5. F. H. Stewart: "The Journal of Mental Science." (April 1928. Page 276.)
6. H. Sahli: "Lehrbuch der Klinishen Untersuchungsmethoden." (Band I. Page 56.)
7. Jahnel: "Wiener Klinische Wochenschrift." (July 1928, No. 28, Page 993.)
8. A Ferraro and F. C. Fong: "The Journal of Nervous and Mental Diseases." (March 1927. No. 3. Page 225.)
9. Watson W. Eldridge, M. D., etc.: "Treatment of Paresis." (Journal A. M. A. April 1925. Page 1097-1101.)

DIET EXONERATED OF CANCER BLAME

The theory that diet is a large factor in the development of cancer received another setback in the twenty-sixth annual report of the Imperial Canser Research Fund just published. The director, Dr. J. A. Murray, stated that his colleagues have been unable to show any connection between malignant growths and dietetic deficiencies. Old rats or rats kept on diets deficient in vitamins A and B frequently develop warts and harmless tumors on the epithelial lining of part of the stomach, but no malignant tumor has ever been observed. In fact, there exists no trustworthy evidence, experimental, clinical or statistical, of a causal relation between cancer and the absence or presence or excess of any particular dietetic constituent, Dr. Murray gave as his opinion.

While cancer is at its beginning a local disease, general resistance or susceptibility plays a part in the development of a tumor or its failure to develop. This is shown by the fact that multiple malignant new growths in a single individual are extremely rare, Dr. Murray pointed out. Also, the occurrence of tumors in males and females in different countries indicates that part of the people are susceptible to the disease, but that the actual place on the body at which it will appear depends on factors of race and environment.

—Science Service.

HYGIENE OF THE MIND*

THOS. J. HELDT
(Division of Neuropsychiatry, Department of Medicine, Henry Ford Hospital)
DETROIT, MICHIGAN

By hygiene of the mind we mean, frankly,the care and the protection of the mind. We are all thoroughly familiar with oral and dental hygiene—care of the mouth and the teeth, yet I dare say that there is in the memory of almost every one here that time when there was no dental hygiene other than extraction of the offending tooth—no tooth brushes and no tooth pastes. How now, with our skilled dentists and oral surgeons, periodic examinations and over-haulings? Is our mental health of any less importance?

In developing our theme, I must ask you to be receptive not only of explanations and directions for the care, the protection, and the conservation of the mind, but also of certain definitions and interpretations which will serve to give an understanding of the fundamental principles and resources involved.

To begin with, let us steer clear of the metaphysical and the old dualism, "mind and matter", not that it is not important, but rather that I choose today to adhere to that special reference resident in such every-day remarks as "he has a mind of his own" or "something wrong with his mind." Mind as such is the motive power within each of us. It is the dynamic expression of our daily activities. It is both individual and collective and is seen in you and me personally and in social group, community, state, and nation, also in mob, panic, revolt, and revolution.

Lest we think of the mind as something immaterial and intangible, let us accept it as a characteristic of our nervous system. In truth, mental hygiene or hygiene of the mind, resolves itself largely into the care and protection of our nervous system. Persons distressed by nervous or mental ills frequently remark, "Well doctor, if I only had something really wrong with me, that I could see or feel instead of this nervousness, it would be different." Let me assure you that the nervous system is not without substance. It is as truly composed of tissue with blood in it as is your heart and your lungs. The brain and the spinal cord with all their attached nerves weigh not less than six pounds, while the heart with all its blood vessels—without the blood, of course — weighs only three pounds. Your nervous tissue has just as much rigiht to get sick as your heart and circulation, and furthermore, illness of the nervous system, contrary to the general opinion, should carry with it no disgrace. A person with heart disease walks about without the need of a single excuse, and even, perhaps, with pride, but the person with nervousness is full of excuses and is inclined to sneak off in shame, unwittingly undermining his self respect to win that of the public. If he does not conduct himself thus, others think he should. The first lesson, then, that all must learn, is to realize that the nervous system is subject to ills and diseases just like the other systems of the body, and that such ills and diseases are not a matter of shame or disgrace.

But we must hasten to other fundamentals. To live, three essentials are absolutely necessary. First, we must have food—sustenance in its most all inclusive sense. Secondly, rest—not sleep alone but rest in its widest application. Thirdly, love. An actual essential? Yes, without hope of it, we would die as promptly as without water. Love has its origin in mating—in attraction of male for female and vice versa. Such being the case let us think of, and speak of love and sex with the open frankness and the unsullied sincerity becoming them and entirely bereft of conventional smirch and abuse.

The life of each individual male and each individual female is motivated by very distinctive primary inborn urges. There are two such basic urges and several secondary urges common to every living member of the human species—whether male or female. The most dominant urge is the desire to live, referred to by psychologists as the instinct of self preservation. The second urge answers the question, "Why do we want to live?"—to love and be loved. Psychologists refer to this urge as the instinct of race preservation, or the instinct

* Read before the Kiwanis Club of Central Detroit, March 26, 1928.

**Dr. Thos. J. Heldt specializes in neuropsychiatry. Te took his A. B. and A. M. degrees in the University of Missouri, 1910 and 1912, and continued there until 1914 as instructor in anatomy with special interest in neurology. M. D. from Johns Hopkins in 1916. Interne and research Assistant, Psychiatric Institute New York City, 1917. Neuropsychiatrist U. S. Army 1917-1919. Clinical Director U. S. P. H. S. Hospital for Psychoneurotics, Waukesha, Wis., 1919-1922. Organizing and establishing Psychiatric Clinics in St. Louis, Mo., and Norfolk, Va., for the National Committee for Mental Hygiene and Commonwealth Fund, 1922-1923. Physician in Charge Division of Neurospchiatry, Henry Ford Hospital, August 1, 1923, to date.

XUM

of reproduction. Speaking of psychologists, they battle much about the designation "instinct" but at this stage of our knowledge, it is probably quite academic, as to what special designation we give to these intrinsic urges, the principal point for us to remember is that they are as basically characteristic of every human, as bitterness is an unquestioned characteristic of quinine. Bearing in mind then the molding influence of these two primary urges especially, let us for the moment, think of the intrauterine development of the human infant. For nine months it derives its food, rest, and protection through special membranes of its mother. Has it any urges during that period? They are there as potentials, certainly. To what extent and degree is still very much a matter of ignorance. We do know enough, however, about the prenatal period of infants to judge it wise to safeguard maternal health in all its phases of hygiene, mental by no means the least.

The hygiene of the mind of the new born infant is a rapidly unfolding story. During the first days, weeks, and months of its existence, the infant is a bundle of reflex reactions. Parental understanding must beware during that time that only the wholesome and the natural be presented to the growing infant for the conditioning of those reflexes. The understanding parent keenly observes that imitativeness and suggestibility are the avenues through which the infant makes his acquisitions as he passes beyond the reflex stage.

In early childhood, the child's love of power as seen in his behavior and his conduct is shaped by the understanding parent through the guidance of approbation for responses cheerfully made. The understanding parent will be also very mindful of the importance of making his directions and instructions simply, clearly, and so explicit that obedience will be encouraged rather than discouraged. Give no directions that you do not expect to be fulfilled. Once given see that they are carried out without exception. A task requested and set should be completed. There is no mind more alert to an omission than that of a child. Obedience is a matter of mental discipline, undeveloped more often than overindulged, difficult to cultivate but a prime essential in all the affairs of life. A wholesome understanding of its nurture and its culture to the point of actual and cheerful spontaneity is a trustworthy plank in the platform of mental hygiene. Think not of obedience in terms of antiquated dogmas but in terms of cheerful invitation and mutual acceptance by parent and child. Remember also that "Little foxes have big ears." Much is said before children under the impression that they are too young to comprehend. Such impression is a very false one and the less indulged the better. It is far wiser to simplify all family discussions so that children may understand and take part. Reservations will not be so numerous that they cannot be covered by father and mother when alone. Avoid nagging, bickering, haggling, and altercation. Children are truly little 'copy-cats' in mimicking and even pantomining their elders in this respect.

With the appearance of adolescence, male and female divide in their personality reactions and very thoughtful consideration must be granted such change. That hygiene of their mind be properly observed, the parents with their adult maturity and experience must think of the adolescent in terms of childhood and not in terms of weight or stature. This becomes all the more true as the adolescent passes into youth and the early adulthood of man or woman. Remember too, that we must constantly think of the youth as a unified whole, a highly organized unit disclosing its entirety of function through its personality. By way of a working definition we may think of personality as the sum total of all the biologically innate, or inborn, urges, dispositions, impulses, and appetites of the individual and all the acquired dispositions and tendencies gained through experience. The activities of the whole human machine in contradistinction to the action or the function of one of its component parts only, is the primary consideration. During their adolescence, both boy and girl still copy the parents closely so if you would mold properly their personality reactions see to the dignity and the importance of parental example.

In studying the relationships of the child or the adult outside of the home we deal with another urge that is second only to the two urges we have thus far emphasized and that is the so called push of gregariousness, or herd instinct. It is that urge that impels the child to play with others. It is that urge that determines group training and as seen in the adult, determines community reaction, interest in state, nation, and international affairs.

Mental hygiene in the adult man and woman is always a very individual matter. A little knowledge here, as in matters generally, is dangerous. Wholesome self

XUM

knowledge is possessed by few, male and female alike. Self-consciousness, inferiority-complexes, mental conflicts, prudishness, and eccentricities are all masks, often hideous, of ignorance parading under the title of knowledge. Very naturally the thoughts, actions, interests, and reactions of both man and woman are going to vary not only with their sex but also with their age, their civic status, that is, whether married or single, and with the experience they have acquired through their various environmental settings, but paramount is the understanding of the simple essentials of life and the urges to which we have already referred. The problems of love, sex, mating, procreation, and the rearing of children are all issues, the understanding of which form a definite chapter in the hygiene of the mind. Yes, there are 'lemons in the garden of love' and they are not all females either. So take an inventory of some of your patriarchal privileges (?) and make some much needed adjustments. While in this eugenic mood we might remember also that 'the old apple tree hasn't much on some family trees when it comes to being shady'. Mental health problems, for example, the interruption, the correction, or the cure of nervousness is not a matter of will-power, nor the imagination. I once had an alert patient say to me, "Doctor, they say it's my imagination. If it is, what is wrong with it? Why is it working overtime"?

We would very much like to be more specific and give other instances of action and reaction but time and space forbid.

That more thought must be given to hygiene of the mind needs but little emphasis. Consider for a moment that in the United States, as given in the census of January 1st, 1923, there were in round numbers 300,000 inmates in our state institutions for the nervously and mentally ill. That number must be doubled, making 600,000, if we include paroled patients and those individuals of unsound mind but who are not sufficiently abnormal to demand that they be in an institution. If we accept in round numbers that the population of the United States is 120,000,000 then it means that one person in every 200 is decidedly nervously and mentally unstable. The rate of increase in insanity is greater than the rate of increase in population. This fact is a challange, not alone to the medical profession but to the understanding of every man and woman making up this commonwealth. What are we doing to improve the condition? Very little compared with efforts in other fields. Visit the Receiving Hospital of this city and you can find most any day from fifty to sixty nervously and mentally ill patients lying on the floor on mattresses for want of space and lack of state and municipal facilities. Our state institutions are over crowded, discouraging waiting lists of several hundred for each institution delay admissions. Does Michigan have many private sanatoria for nervous and mental diseases? Only very few worthy of the name. The number of small ones of commercial type are thoroughly inadequate to meet the problem.

Is there any mode of preventing mental disease? Just as surely as vaccination prevents small pox, but the public is still too lethargic to understand the actual needs and the remedies offered.

Is it just blind criminal impulse that causes such deeds as that which mars the history of Bath, Michigan. Obviously, through mental aberration, Andrew Kehoe claimed 44 lives, men, women, and school children, his own life included.

Albert Hoteling in an impulsive moment sacrificed the life of an innocent girl of tender years.

In the case of Kehoe, if we can believe the accounts in our newspapers, placards on the man's fence announced "Criminals are made, not born" and observation showed that the man had ringed his fruit trees in order to cause their death. His excessive brooding over taxes and collections was well known to his neighbors. Was that not sufficient warning to let those know, who can see, that Andrew Kehoe's mind was not functioning as it should?

Would mental examinnation have disclosed any aberrations in the personality reactions of Albert Hoteling prior to his deed? Very probably, although a much more complex problem than that of Andrew Kehoe.

Great is the wisdom and many are the figurative padlocks on the door after the horse is stolen, but we promptly forget and nothing is done. Hoteling in prison at Marquette doesn't solve the problem in the least.

One of the greatest remedial steps necessary in bringing about proper hygiene of the mind, proper protection of society, is periodic and appropriate medical examination for the central nervous system, just as we have for our heart, lungs, eyes, teeth, and tonsils.

In conclusion, it is my earnest plea that

XUM

public spirited men and women come to the aid of the medical profession in bringing about the establishment of proper preventoria for nervous and mental diseases, and assist in the encouragement of periodic nervous and mental examinations.

SELECTED REFERENCES

For Adults:—

Your Mind and You—George K. Pratt, 1924. National Health Series, 30 cents. Funk & Wagnalls Co., New York City.

Concerning Parents—1926. A Symposium on Present Parenthood, by 24 different authors under auspices of Child Study Association, New Republic, Inc., $1.00, 421 W 21st St., New York City.

Happiness in Marriage—Margaret Sanger, 1926. $2.00, Brentano's, New York City.

The Mental Hygiene of Childhood—Wm. A. White, 1919. $1.35. Mind and Health Series. Little, Brown & Co., Boston, Mass.

The Child—His Nature and His Needs—M. V. O'Shea, et al., 1924. $1.00. The Childrens Foundation. Valparaiso, Ind.

The Mental Health of the Child—D. A. Thom, 1928 Harvard Health Talk, $1.00. Harvard University Press, Cambridge, Mass.

Pamphlets:—All here mentioned may be obtained from National Committee for Mental Hygiene, 370 Seventh Ave., New York City.

Packet No. 20—Ten pamphlets for $.75. Among them:—
Personality Deviations and Their Relation to the Home—Foster.
Child Management—Thom.
Points on Child Behavior—Lowrey.
Can Youth be Coerced?—Williams.

Packet A—A series of pamphlets for $1.00, introducing the non-medical reader to mental hygiene.

Packet B—A series of pamphlets for $1.00, discussing the mental hygiene of childhood.

Packet C—A series of pamphlets for $1.00, discussing various aspects of mental hygiene, among them:—
Education and Mental Hygiene—Campbell.
Mental Hygiene Problems of Normal Adolescence—Taft.
Mental Adaptations—Wells.
A Selected list of books on Mental Hygiene and Allied Subjects—Williams.

For Girls:—

The Doctor's Daughter—W. S. Hall, $.25. Amer. Med. Assoc., 535 N. Dearborn St., Chicago, Ill.

Life Problems—W. S. Hall, $.25. Amer. Med. Assoc., 535 N. Dearborn St., Chicago, Ill.

The Three Gifts of Life—Nellie M. Smith, $1.00. Dodd, Mead & Co., New York City.

For Boys:—

John's Vacation—W. S. Hall, $.25. Amer. Med. Assoc., 535 N. Dearborn St., Chicago.

Chums—W. S. Hall, $.25. Amer. Med. Assoc., 535 N. Dearborn St., Chicago, Ill.

Chums—W. S. Hall, $.25. Amer. Med. Assoc., 535 N. Dearborn St., Chicago, Ill.

Life's Beginnings—W. S. Hall, $.25. Amer. Med. Assoc., 535 N. Dearborn St., Chicago, Ill.

NOTE—This list of books is presented with the names of publishers and the prices attached as the object is to supply those of the medical profession who are interested, with concrete assistance for cases which come under the particular designation of mental hygiene.

MICHIGAN RESEARCH MAN HONORED

Out of the research that won the $1,000 prize of the New York meeting of the American Association for the Advancement of Science just closed, there may come new treatments for severely burned fire victims, water-logged fat people, and sufferers from diabetes insipidus. Dr. Oliver Kamm, the research director of the Detroit drug manufacturers, Parke, Davis and Company, who was honored for his paper on "Hormones from the Pituitary Gland," has studied for the past few years one of the smallest and most important organs of the human body. About the size of a green pea, the pituitary gland is located near the brain, carefully protected and inaccessible. The front or anterior portion of the gland is responsible, when it is overactive, for some giants of the circus and other ungainly, unfortunate individuals whose skeletons have grown abnormally. Dr. Kamm investigated the back or posterior lobe of the gland, and found two hormones, called alpha and beta, produced by it. If you could buy these hormones they would cost you millions of dollars a pound. As it is, Dr. Kamm has been able to produce only a very few fractions of an ounce. So limited is the quantity that the chemical analysis must be performed under the microscope and the pituitary glands of 50,000 cattle must be used to obtain enough hormones for a single laboratory experiment.

The alpha hormone promises the women of the world some relief from the pains of childbirth as it aids that process. At present its cost price, at the rate of $3,000,000 a pound, prevents practical use.

The beta hormone has the important function of controlling the utilization of water in the tissues of the body. Dr. Kamm has been able to classify individuals as "physiologically wet" or "physiologically dry."

"Some individuals ,the physiological wets, are extremely sensitive to the action of the beta hormone," Dr. Kamm said in explaining his work. "Others readily return to normal after administration of the hormone and they are the physiological drys.

"The fleshy type of individual is almost invariably the wet type, whereas the slender, scrawny individual is usually a dry. The suggestion is therefore made that we have here possibly one of the important explanations why the former is fleshy and why the latter fails to put on weight readily in spite of an excessive intake of food and water.

"It is apparent that the portly person who is desirous of reducing must cut down on his liquid intake, as well as on his intake of solid food. As for the scrawny person, gland therapy may possibly be indicated, but here the work is still in the investigative stage and conclusions cannot be drawn."

Since the beta member of the "pituitary twins" affects the body's water content, it may prove useful in the treatment of severe burns which produce their damage by dehydrating the tissues of the body. Diabetes insipidus, characterized by disturbed water conditions of the body, may be better understood and treated through the use of the beta hormone when its cost is reduced to a price much less than its present value of a million dollars a pound.

The post-pituitary hormones are very similar in chemical behavior in spite of their different physiological action. One of the effects that are produced with equal facility by either of them is the increasing of the sugar content of the blood to counteract, for example, an overdose of the hormone, insulin, which science gave the world only a few years ago as a treatment for diabetes mellitus.—Science Service.

XUM

SOME ACTIVITIES OF THE MEDICAL DEPARTMENT OF THE MICHIGAN TUBERCULOSIS ASSOCIATION FOR 1928*

E. R. VAN DER SLICE, M. D.
(Medical Adviser)

The Medical Department of an organization such as the Michigan Tuberculosis Association has a great variety of duties and responsibilities. It is closely connected up with the whole organization. In fact its activities are so intimately dovetailed into those of other departments that it is next to impossible to draw a line anywhere and say that this is not connected with the Medical Department.

Perhaps one of the most important duties of this department is the correlation of the social and medical activities of the association. Details can hardly be given. It is more or less intangible, nevertheless very real. It may interest you to know that hundreds of letters reach this office from laymen asking for information concerning tuberculosis. Many letters are also received from doctors asking for suggestions as to routine and treatment for individual cases. All these letters call for replies. The reviewing of literature for distribution by the association, both scientific and more general, for the purpose of eliminating inaccuracies, requires time as do many other routine duties. Clearly then in a brief paper I can but touch upon the more obvious activities of the Medical Department during 1928.

RESEARCH WORK

This department is now engaged in a piece of research work which we believe will give information not now available, concerning the needs of the school children of Michigan who are physically below par. It will also tell us what is being done for these children and what percentage of them are being reached. We hope further to learn of the relative effectiveness of the different methods used in building up and training these children. It is probable that in another year we may be in position to make suggestions and recommendations for improvement of the plans now in operation.

REGIONAL CLINICS FOR DOCTORS

For several years there has been a growing conviction among the doctors of Michigan that some brief practical review of the essential points in the diagnosis of tuberculosis would prove a help to the profession of the state. This department seized upon the early diagnosis campaign as presenting an opportunity to initiate some such effort. Medical superintendents of Sanatoria, members of the Michigan Trudeau Society, and other physicians were consulted regarding the advisability of attempting such an undertaking. As a result of these inquiries a one day demonstration clinic for doctors, in different parts of the state was decided upon as a feasible plan.

The boards of control and the medical superintendents of five county sanatoria offered the resources of their institutions to further this plan. Members of the Michigan Trudeau Society (which organization always holds its fall meeting with this association) generously tendered their services toward making such an undertaking successful.

On February 16th, the first regional clinic for doctors was held at Ingham sanatorium. Dr. J. A. Myers of the University of Minnesota, who has done much for children with this disease, gave the luncheon talk and demonstration on tuberculosis in childhood. The sixty (60) doctors from the southeast section of the state, who accepted the invitation to this clinic, spent the day in small groups studying the normal chest, and tuberculosis in different stages, under the direction of members of the Michigan Trudeau Society. The enthusiasm displayed and the expressions of appreciation by the doctors attending, demonstrated conclusively that this effort was well received. Many doctors by word of mouth and by letter have asked that these clinics be repeated.

The success of this initial doctor's clinic was repeated without diminution of fervor in the sanatoria of Kalamazoo, Muskegon, Oakland and Marquette counties. In all 232 doctors from many parts of Michigan left their busy practices to spend a day at these clinics. This department is anxious to co-operate with the Trudeau Society and the medical superintendents of the sanatoria of Michigan in making the doctors' clinics of 1929 of still greater value. The doctors attending this series of clinics form the nucleus of a list to whom scientific literature on tuberculosis is sent each month.

* Read at the Twentieth Annual Meeting of the Michigan Tuberculosis Association.

XUM

PERMANENT CLINICS

The permanent chest clinics conducted by the local affiliated societies of this association are correlated by the medical department, and reports of the work done are quite complete in a large percentage of them. Approximately 2,000 people have been examined in these clinics since the beginning of the year. This does not include those examined at the clinics conducted in twelve counties of the state, supporting ten accredited sanatoria. In these counties the medical superintendents of the sanatoria conduct the clinics as a part of the tuberculosis program. The more populous and wealthy counties can afford to maintain a permanent clinic but more than half the counties of the state cannot do so. The itinerant clinic must continue to serve this group.

THE ITINERANT CLINIC

The itinerant chest clinic has gone into 42 counties so far, this year. These are counties without permanent clinic service. One thousand, eight hundred eleven people have been examined at these clinics and copies of the findings sent to the family doctor in every instance. Out of the 1,811 cases examined, 207 or 11% were found to have tuberculosis in some form. Three hundred eighteen or 16% were classed as observation or suspicious cases. These 515 people were requested to report to their family doctors within one week from the close of clinic for definite advice and for further observation and study. Because of the limited clinic force and few public health nurses in the field it is not always possible to see that all of these cases reported back to their doctors. This is a lack which should be corrected another year. Nurses should follow up these cases and see that they report to their doctors as advised. They should also with the consent of the doctor give home instruction. Because of lack of funds to prolong the clinic service, approximately 500 cases were turned away without examination.

Many counties in Michigan need greater clinic service, and definite follow-up work. The large field and limited finances make this a difficult problem. The larger and more favored counties of our state must continue and even increase their contributions to their weaker sisters.

The itinerant clinic is becoming more and more popular not only among the people generally but also the doctors are more co-operative. It is not unusual for a large percentage of cases examined at clinic to be brought in or referred directly by the doctors themselves. Recently at one of these clinics a doctor speaking for a group of his colleagues made the suggestion that the local medical society assume the responsibility of getting patients out, and doing a large part of the preliminary work for the clinic. The increasing goodwill and support of the doctors assures a greater future for the chest clinic. The tuberculosis campaign is not a lay movement. It is a combined medical and social movement. The better the understanding and the greater the cooperation between these groups the surer are we of lasting rsults. Nothing else in the campaign is so important as this.

The records of the itinerant clinic emphasizes the fact that there is a shortage of sanatorium beds in Michigan since many of the cases of tuberculosis discovered had to be placed on the long waiting-lists of such institutions. Many of these cases are being cared for in homes where there are children and spread of the disease is almost inevitable. This clinic has aroused interest in the need of hospitalization of advanced cases and the institutional care of other cases including, children with the lymphatic type of the disease. Local health officers are coming to more fully realize their responsibility in the care of the tuberculous. This clinic has had its part in stimulating their interest.

The work yet to be done by this department is far greater than its past accomplishments. And we enter the new year with full realization of our shortcomings; but with the determination to do more and better work in 1929. We shall at all events work in very close co-operation with the doctors of Michigan.

FRACTURES OF CLAVICLE

The clavicle is one of the most frequently broken bones in the body. Statistics show that from 5 to 10 per cent of all fractures occur in the clavicle. E. L. Eliason, Philadelphia, believes that ambulatory dressings for fractures of the clavicle are generally unsatisfactory as regards comfort and anatomic perfection, although function is almost universally all that could be desired. The multiplicity of methods points to the unsatisfactory state of such fixation. The recumbent methods which take cognizance of the necessity of a scapula flat on the chest will give the best results anatomically as well as functionally. Complications other than associated bony lesions are very rarely due to the fractured bone itself. Open reduction is seldom necessary. It is the man behind the splint that counts.—Journal A. M. A.

XUM

REPORT OF A CASE OF INTERSTITIAL PREGNANCY OPERATED UPON BEFORE RUPTURE

CHARLES E. DUTCHESS, M. D.
DETROIT, MICHIGAN

Interstitial pregnancy has been defined as gestation in that part of the oviduct which is within the wall of the uterus. It is of sufficient rarity to warrant the report of a case. Rosenthal, who investigated 1,300 ectopic pregnancies says there were only three per cent of these of the interstitial variety. Wynne, in a study of 1,547 cases of ectopic pregnancy, found an incidence of only 1.16 per cent. Martin found 1 in 77. Oastler found 2 in 106. Foskett found 1 in 117. Tait found only six specimens in the English museum up to 1890.

Prior to 1893 all cases in the literature had been found at autopsy ,these patients having been treated expectantly with 100% mortality. On October 15, 1893, the first operation for interstitial pregnancy was done by Traub who did a supravaginal hysterectomy, and eight days later Lawson Tait operated on the second case, incising and draining the sac. Since that time the condition has been diagnosed and reported several times each year as Moore, in 1922, found 79 cases reported, 20 having been operated on before rupture.

With a view to reporting the present case some twenty case reports were studied; however, nothing was revealed other than what had been noted in previous and more exhaustive studies. The general features of the condition, then, are given here as they have been described in previous discussions.

The average age of these patients is about thirty-two years. The condition occurs more frequently in multiparae. The history and symptoms both before and after rupture are identical with those of a tubal pregnancy. There is a delay in menstruation of about fifteen days followed by expulsion of a deciduum with profuse or prolonged menstrual bleeding. Case histories vary considerably. Lewers considered persistent amenorrhea a very important sign in differential diagnosis. Wynne's investigation of thirty-six cases shows persistent amenorrhea in twelve, regular periods in two, and irregular bleeding in twenty-two, although very slight in five of these. If rupture occurs it is usually marked by a sudden sharp pain in the lower abdomen followed by faintness, thirst, abdominal tenderness—in short, the classical picture of ruptured ectopic pregnancy with abdominal hemorrhage and collapse.

Examination before rupture may reveal a definite enlargement in one cornu which is difficult to distinguish from a small myoma in the cornu, or pregnancy in one horn of a bicornate uterus, the history offering a clew to the diagnosis. Very few cases have been diagnosed before operation, which has seldom been done before rupture. Even with the abdomen open, the diagnosis is not easy. Anatomically, interstitial pregnancy presents three classical characteristics:

1—Ruge-Simon's sign (asymmetry of the uterus).

2—Asymmetry of the adnexa.

3—Displacement of the round ligament (which may be upward, downward or laterally).

There is usually an elevation of the fundus on the gravid side. The tumor may be on the cornu or downward, lateral to the uterine body. The tubal insertion on the gravid side is usually drawn up when the ovular sac develops upward.

When seen after rupture there is most frequently a jagged rent in the upper aspect of the cornu, this being the commonest site of rupture. However, rupture may occur between the walls of the broad ligament which renders the case more serious. The fetus may be found free in the pelvis or within the tumor. Due to the rich blood supply of the uterine wall the hemorrhage after rupture is usually inundating in character, being worse than that seen in ruptured tubal pregnancies. The mortality is variously estimated at from about 11% to about 20%. This has been falling in recent years due mostly to less delay in operating. However, the interstitial is still to be considered the most dangerous form of extrauterine pregnancy.

Not all cases go on to rupture. Interstitial pregnancy may end in one of three ways:

1—By rupture.

2—By abortion into the uterus, which is rare and may be followed by a normal pregnancy, an angular pregnancy, or expulsion of the ovum.

3—By death of the ovum and formation of a mole.

Although most cases rupture at about six weeks or two months, rupture has been

XUM

reported at five, seven, and even nine months. After viewing the history of causes assigned for this condition, we may as well admit that the cause is unknown.

Once the diagnosis is made or suspected, the treatment is immediate operation. Resection of the affected cornu may be sufficient in some cases; in others hysterectomy is necessary. The diagnosis usually cannot be confirmed without microscopic examination.

This patient was first seen on August 24, 1928, complaining of pain in the lower left quadrant and loss of weight. Had been told by a physician that her left tube was bad. Had had no treatment. Had taken some medicine for epigastric pain.

Family history: Irrelevant.

Personal history: Has usually been healthy. Had no need for a doctor until her confinement three years ago. Has had no operations or serious illnesses.

Menstrual history: First menstruated at sixteen. Is usually regular, twenty-eight day type, flowing four or five days without pain. Married at twenty. One normal birth. Recent periods atypical. April and May periods were late. In June patient menstruated ten days starting on time. July period began on the 26th, which was four days late, and lasted for three days. On August 9th patient began to menstruate and flowed for three days. She had a normal period September 1-4.

Present illness: During the previous March patient had some pain in the epigastrium and bad taste in her mouth. The pain complained of in the lower left quadrant has not been synchronous with menstruation. It was especially bad on August 19th. The bowels move well without cathartics. Appetite good. Food gives no pain but patient has occasional regurgitation. Has more or less chronic feeling of being sick at her stomach.

Examination: The general examination revealed nothing of any special interest. Abdomen is normal in contour and there are no palpable masses. There is some tenderness to the right of the umbilicus.

Pelvic examination: Inspection of the perineum reveals no evidence of discharge or irritation. Introitus somewhat relaxed. Glands negative. Cervix closed; points backward; is not lacerated. Fundus anterior and freely movable; somewhat elongated and slightly softened; is tender to pressure. At the junction of the left tube and uterus is an enlargement the size of a bantam egg or about four centimeters long by three centimeters wide. This is somewhat tender.

Right adnexa is somewhat tender and cannot be clearly mapped out. Speculum reveals only slight discharge. No other abnormalities.

Diagnosis of chronic left salpingitis was made, considering likelihood of chronic appendicitis.

The patient was operated upon on September 11, 1928. On incising the skin it was noted that the patient bled very profusely with capillary oozing. The fundus being brought into view presented a smooth ovoid tumor on the uppermost portion of the left cornu. This was about the size and shape of a bantam egg, was cystic in consistency and translucent in appearance, the contents being obviously hemorrhagic. The possibility of interstitial pregnancy was considered but it was felt that the condition was most likely a degenerating fibroid. A right hydrosalpinx with adhesions and varicosities in the right broad ligament was noted. The left tube and ovary were negative. Accordingly a hysterectomy was done, removing the right tube and ovary leaving the left tube and ovary in situ. The veins of the right broad ligament and surfaces where adhesions were broken up gave a great deal of trouble with capillary oozing. This bleeding seemed to be of hemophilic character and was very difficult to control. After repeated attempts to control this bleeding and after much delay, it was decided that further oozing would not be serious so patient was closed up and returned to bed. As the bleeding and operative shock had been considerable, her condition was poor, the pulse running about 160 and being poor in quality. A transfusion was arranged for and given as soon as possible. Improvement was at once noted, and from this time on patient made an uneventful recovery. It was not until the microscopic section from the tumor had been examined that the true nature of the condition was definitely known. An interstitial pregnancy had developed in the left cornu, had eroded its way through the tissues of the wall and was contained by only a thin layer of uterine tissue and peritoneum. The fetus had died and was being slowly digested and absorbed, otherwise rupture would likely have taken place some weeks previously.

BIBLIOGRAPHY

Am. J. Obst. & Gynec. 15:699-701, May 1928, d. Palma, Interstitial tubal pregnancy with report of case.
J. Obst. & Gynec. Brit. Emp. 34:355-356, 1927. McIlroy, Interstitial pregnancy at Term.

Internat. J. M. & S. 40:316-318, Aug. 1927. Neer, Interstitial Pregnancy Case.
Am. J. Surg. 3:271-273, Sept. 1927. Nelson, Unruptured Interstitial Pregnancy.
Am. J. Obst. & Gynec. 13:23-25, Jan. 1927. Musselman, case of Interstitiol Pregnancy.
Lancet: 2:494-495, Sept. 6, 1924. Nash, Rupture of Tubo-uterine Gestation.
Lancet: 1:793, April 22, 1922. Wolf, case of bielateral ruptured ectopic gestation sacs.
British M. J. 2:309, Aug. 19, 1922. Heekes, Case of Interstitial Gestation.
J. Obst. Gynec. Brit. Emp. 29:314, 1922. McIntyre, Case of Interstitial Pregnancy.
Boston M. & S. J. 187:284-288, Aug. 1922. Moore, Interstitial Pregnancy with Report of a case.
Surg. Gynec. Obst. 33-285, Sept. 1921, d. Palma, Interstitial Pregnancy—2 cases.
Report of a case of Interstitial Pregnancy.
Am. J. Obst. & Gynec. 2:642, Dec. 1921, Kennard & Walsh.

LOVE OF SURGERY*

JOSEPH LIBURT, M. D.
DETROIT, MICHIGAN

It came about during their engagement, the planning of their future: so much of the day for the practice and advancement in medicine; the rest for social and personal venture. In such a wise did their wedded life begin. Adele was all enthusiasm at John's efforts to become a great surgeon. When he came home, she would ask intimately about each case: what he did; how much he charged and if too much; did he make the right diagnosis—to all of which John showed an eager readiness to respond.

Of an evening he took to reading journals and writing surgical treatises. He visited clinics, meetings, and medical congresses in different cities. Not a little pride was taken in his invention of instruments to make the surgeon's task easier and more efficient.

As the lure of the scalpel took more and more of his time and fervor, Adele gradually discovered that home life, to her such a potent factor, had come to be for John, unconsciously, perhaps, a diastole for the morrow's renewed joust with medical life. The matter of children was always put off to some distant day, "when John would become famous".

She awoke one day to the keen realization that love, which to her meant life, was cruelly passing her by. This thought gave way to a brooding, and a hating of all things medical. Yes, that was it! The ogre Scalpel had stolen a love that was rightfully hers.

There followed daily discussions, tending to make John realize that his time these many years had been monopolized to the exclusion of the real values in life. What of art, of love, of hobbies? Where was her place in his scheme of things? Or was she merely an unavoidable necessity? There could be no half-way measures: if he were to concede her place in the sun, he must sever himself completely from all medical contacts; the rest of his life would be for love, and, as Adele supplemented, "art and hobbies". With what mingled feelings did John at the sunset of his career give up his office, send notices to his patients, resign from his medical societies, and cancel the journals, the beloved journals. He had written finis to all that hurly burly of life. . . .

For two or three months, Adele re-lived the glory of their earlier life. John had seemed to understand, and Adele was infinitely happy. The spectre of the scalpel was truly no more.

But was it no more? All too soon she sensed the struggle which engulfed him: a restlessness, a passive acquiescence to her social demands; an incessant "going out for a walk", and forgetting the dinner hour; a sleeplessness bordering on insomnia; his stupid responses to her attempts at diversified conversation; a listlessness quite foreign to the John she had known—he was truly helpless to face this new situation. If Adele sorried of her bargain, she at least gave no outward indication. But there was no going back, that was certain: his action in that matter had been irrevocable.

And John? He would be up at his usual time, six o'clock, dress, and start for the door, only to check himself. No, he smiled, no more of that; and glancing down, would pick up the morning paper. Previously, on his morning sojourn to the hospital, while waiting for traffic signals to change, he would fancy reading the paper in an easy chair, puffing luxuriously at a Corona. The same newspaper now held but little interest for him. Like the self-made man, who, deprived of toys when a child, had purchased them in great quantities, only to discover that his imagined delight did not materialize.

Gad, how time dragged! In ennui, he would stroll downtown. Strange, he had never studied the down town crowds. Everybody going somewhere. He recognized several operative cases. One in particular. And he had proved to Brown that his diagnosis—but what was that to him now!

He was in front of a book store. Conrad, Galsworthy, Chekov, those were the gems Bill spoke about. Always looked up to Bill. He read them conscientiously, but when Chekov interspersed some medical phrases, he would fall into a reverie, and thus Adele would find him.

The afternoons. Often he found himself in front of his old office door. Or in the cloak room of the hospital. The movies came to his mind, and he would wait in line for his next. He of all persons to an afternoon movie, and patients waiting in his office! Patients? What was he thinking of!

For him there was no more waiting, all scrubbed and sterile, amid the scurrying of nurses and futilities of internes. The wheeling in of the patient, the prep, the familiar smell of the ether, the loosening of table straps, and all ready to go.

The usual abdominal incision, the clamping of spurters, the separation of muscle, the pearly peritoneum, the bobbing up and down of intestines; the steam from hot packs getting underneath the mask; the turning to have the nurse wipe his forehead; the sponge count. . . . Off with the gown and hands sweaty from the gloves.

Out in the hall, horse playing with the fellows, and listening to some one else's hard luck with a case; coffee and crackers at nine-thirty and once more the same enactment.

The rounds, waiting for the nurse on the hall his tolerance of erudite internes, the fingering of charts . . . . talking it over with grief-stricken relatives.

The office appointments, the consultations, the

*Dr. Liburt is one of the younger physicians of Detroit. This little excursion into the romantic aspect of medicine is commended to the reader.

XUM

chronic kickers of bills; some patient he'd operated years ago, in to renew his acquaintance. Driving home during the rush hour, anticipating tomorrow's schedule....

The medical meetings and conventions, and what went with them; the time he would spend on his papers—all this was relegated to a limbo of the receding past.

It would take time, he mused, but he would surely find himself. He would hearken to the literati, improve his golf; even now he sensed the pleasure Adele derived from his company. Those poor dubs, still answering to the call of the ether can....

And yet that feeling of calm was not to be his. At his heart a constant tug, a gnawing. He was satiated with this new scheme of things. As in a visitation, he saw that for him art, love, and hobbies had but one meaning: surgical practice.

Try as he might, this thought gave him little rest. Sequestered in his study room, he pored over it again and again, for hours battling out the issue.

Knowing too well the danger of loneliness, it became Adele's custom to keep John daily company: to soothe his jagged nerves, to divert his mind to neutral channels; to paint in tempting words a life which would far outshine the old; to her notion it might ease the bridging over period. She was getting to feel her efforts to be not entirely in vain, that success was imminent. Then one day, as she opened his study room door, a strange sight unfolded itself. There was John, head bowed down, his right hand enmeshed in a glittering array of instruments. She approached, and shook him gently....and then more firmly. She lifted his head, and therein was the answer. And knowing, she gazed unseeingly at the metal which had thwarted her desire.

CAVERNOUS SINUS THROMBOSIS—WITH REPORT OF CASE

B. F. GLOWACKI, M. D.
DETROIT, MICHIGAN

A proper conception of cavernous sinus thrombosis hinges upon the mechanism of the venous circulation of the face, orbit and the sinus itself. The free anastomosis of the angular vein with the terminal branches of the ophthalmic veins predisposes to a dissemination of an infectious process from the nose, upper lip and eyelids into the cavernous sinus. This is the anterior route of invasion of the sinus, the posterior route is established through connections of the sinus with the inferior petrosal sinus (aural infection), and the inferior route through the pterygoid plexus of veins, and the capillary connections with the nasal sphenoid sinus.

The anatomic-pathologic basis of the cavernous sinus thrombosis is dependent upon the extension and dissemination of a local infection (furuncle, carbuncle) by incision and the added trauma and insult of squeezing, into a progressive thrombophlebitis[1] along the veins entering the orbit and the cavernous sinus.

The clot within the sinus is primarily protective in origin; it is not a disease itself. "Later,[2] however, if the protective, obliterating clot does not succeed in limiting the infection to the vasa vasorum, to the wall of the sinus, or the cavity of the sinus, the clot itself may become purulent with the discharge of micro-organisms into the blood stream, thus becoming a general blood stream infection."

From a surgical standpoint cavernous sinus cases may be divided according to the virulence of the pathologic process, into (1) the acute and fulminating, and (2) the chronic, compensatory. When a very rapid venous obliteration occurs, resulting in high fever, chills, chemosis of the conjunctiva, exophthalmos, first of the eye of the homolateral side and then of the opposite eye, the process is characterized as an acute fulminating thrombophlebitis. Death invariably results. When only a low grade infection (staphylococcus) is present, a gradual occlusion of the sinus occurs, and exophthalmos and chemosis are not noted nearly so early, or are only slight. The collateral circulation is given time for adjustment and the process becomes a chronic one. Again, a case of thrombophlebitis which in the beginning is infected, may compensate to the extent of heaping up a still larger clot, and become entirely aseptic.[3] The case history of this last type will be reviewed here briefly.

RESUME

A 14 year old boy had a furuncle incised which was located on the nose near the inner canthus of the left eye. The following day the swelling spread to the left orbit, edema of the lids, chemosis of the conjunctiva, protrusion of the bulb ensued. A high fever (104.4) occurred and he complained of constant left temporal headaches. Two days later a similar swelling and protrusion was noted on the right side.

The patient then spent two weeks in a hospital, the high fever continued, and the pulse was reputedly slow. The X-ray findings of the paranasal sinuses were negative; blood examination revealed nothing abnormal.

The patient was first seen when the left sided headaches became more excruciating. The boy was extremely emaciated, conscious, but responding only in monosyllables, complaining chiefly of

the headaches and photophobia. Temperature 99.5, pulse 95. There were no palsies of the extremities; no sensory disturbances.

The left eye was entirely extruded from the orbit and rested on the cheek; a suppurative panophthalmitis was present with the pus pointing through the cornea. Photophobia but no vision present. The upper and lower lids were swollen, ecchymotic and tender.

The protrusion of the right eye was so great that, although, the lids closed upon the bulb, the eyeball was entirely immobile. The tenderness of the eyeball and the photophobia were very disturbing. The pupil was widely dilated and reacted sluggishly to light; there was no ciliary injection but the conjunctival veins were engorged and very prominent. The vision in this eye was 1/60, approximately four inch type seen at one yard. Fundus examination disclosed a marked fulness and tortuosity of the retinal veins and edema of the retina. The nose and throat were without special findings. The WBC was 10,500; the Wassermann was negative; there were casts and albumen in the urine.

On November 5th the macerated left eye was enucleated and the deeper orbital tissues found invaded by an extensive cellulitis. There was no evidence of any tumor mass. The following day the temperature dropped to normal, and in six days the pulse gradually declined from 90 to 70. The headaches and photophobia subsided completely. Drainage from the left eye continued about three weeks and as soon as the remaining edema of the conjunctiva disappeared, a suitable prothesis was fitted.

On December 15th the right eye protruded about as much as before, there was no photophobia however, and no evidence of sympathetic ophthalmia. The retinal veins were still full but less tortuous than before, and the vision was now normal, 6/6.

On January 10th, a little more than two months after the operation, the exophthalmos of the right eye had diminished appreciably, the retinal veins were considered to possess about their normal calibre. The patient gained 15 pounds in weight and felt that the protrusion of the right eye was receding although it had not as yet reached its former natural position.

Infective thrombophlebitis of the cavernous sinus occurs (1) when an infected clot comes from another sinus; (2) from disease of the nasal sinuses; (3) from orbital cellulitis; (4) from pyogenic processes of the face or eyelids. The principal symptoms are edema of the lids, chemosis of the conjunctiva, extreme degree of exophthalmos; pain and the general symptoms of pyemia. Choked disc or pronounced venous engorgement of the retina is present; the vision is impaired. The condition invariably spreads to the other eye along the intercommunicating radicals of the cavernous sinus.

In the acute fulminating case, a surgical attack upon the sinus assures little success because of the severity of the infection. A moderate hope of the patient's recovery in the chronic compensatory types is based largely on the protective nature of the clot. Spontaneous recovery may ensue after drainage and exenteration of the original focus of infection: it would be a great surgical error to remove the protective clot under such circumstances.

NOTE: On January 22nd, nearly three months after the operation, the patient was enjoying the best of health. Two days later, he suddenly became bedridden again with an excruciating headache and symptoms of meningitis. The spinal fluid was thick and cloudy, the cell count fluctuated between 10,000 and 50,000. Antimeningococcic serum was administered daily. No organisms could be isolated in the spinal fluid on repeated examination. After a few days of improvement in his general condition, the patient suddenly expired on February 4th, when his spinal fluid again became very cloudy; in the last specimen of fluid short-chain streptococci were found. The author did not have the opportunity to study and observe the patient during his last illness, however, the final diagnosis points either to a frontal lobe abscess or basal meningitis.

BIBLIOGRAPHY

1. Bothe, Albert: "Staphylococcus Septicemia." Medical Clinics of North America. Jan. 1923. Vol. VI, pp. 1029 tot 1052.
2. Eagleton, Wells, P.: "Cavernous Sinus Thrombophlebitis." MacMillan Co., New York, 1926. Page 115.
3. Dwight and Germain: "Thrombosis of Cavernous Sinus." Boston M. & S. Journal, 146:456 (May) 1902.

SYNERGISM OF MAGNESIUM SULPHATE AND MORPHINE

The synergism of magnesium sulphate and morphine has been definitely proved clinically by James T. Gwathmey, New York, in both obstetrics and surgery, the value of morphine having been increased from 250 to 500 per cent. Magnesium sulphate is put up in ampules alone, with morphine, or with morphine and 2.5 per cent of procaine. If the practitioner prefers, he can sterilize and make his own magnesium sulphate according to the formula of Auer, as follows: "Weigh out 250 Gm. of magnesium sulphate and add enough water to make 1,000 cc., thus making a 25 per cent solution." A chemically pure magnesium sulphate must be used. There is no more danger in administering morphine in 2 cc. of a 25 per cent solution, as far as life is concerned, than there is in administering morphine in 2 cc. of water. Experimentally, this synergism is life saving with laboratory animals when ether vapor is used as the anesthetic. Clinically, it is also life saving, decreasing both morbidity and mortality. It should be used with all methods of anesthesia and analgesia. Carefully kept records of synergistic obstetric analgesia in nearly 20,000 cases show that it is far superior to "twilight sleep" in every way. The synergism of magnesium chloride with amidopyrine, sodium salicylate and acetylate acid has been proved in the laboratory by Barbour and Winter, and has an indirect bearing on the subject under discussion. The synergism of magnesium sulphate and ether has been proved for the alvino rat, rabbit, dog and man, and is of practical importance in relation to the synergism of magnesium sulphate and morphine. The probability is that magnesium sulphate synergizes with almost any drug with which it is compatible, by prolonging its action, deepening its effect, reducing fever, or acting in other ways.—Journal A. M. A.

YUM

MICHIGAN'S DEPARTMENT OF HEALTH

GUY L. KIEFER, M. D., Commissioner
LANSING, MICHIGAN

THE EIGHTH ANNUAL PUBLIC HEALTH CONFERENCE

"If we ask, 'Whither mankind?' so far as public health is concerned, I think we have to say that man now not only on the average lives longer, but he can work more effectively, lose less time from work and thus earn more wages and on the whole be happier in his work than at any time in the past," Dr. James Wallace, associate field director of the American Public Health Association, told the 300 members and guests of the Eighth Annual Public Health Conference held in Lansing on January 9, 10, and 11, 1929. The Conference was, as usual, sponsored jointly by the Michigan Department of Health and the Michigan Public Health Association.

"One of the most hopeful and healthy signs of the times is the more general interest on the part of the public in finding out ways and means of protecting and promoting the public health. It is not merely that large industries for protecting the health and building up the resistance of their workers or their risks, but whole communities are becoming more generally interested in finding out what their health facilities are, how they can be improved, and what the local citizens can do to effect such results.

"Communities are asking to be surveyed as to their public facilities, individuals and groups are seeking information as to what they can do to improve or fortify their own community. All this is indicative of a general program of education in public health and indicates that the people are now more receptive and more ready to entertain any project that will tend to make their community a safe and better place in which to live and bring up their families.

"The second hopeful sign is that surveys and studies and compilations of data indicate that real progress in public health is being made. There are some things, of course, that indicate that we have still a long road to travel before we reach the end of our journey in carrying out an all inclusive satisfactory public health program. In connection with health administration, the facts revealed by the partial survey recently made in regard to the tenure of office by the health officer show that we have not progressed as far in public health as along some other lines of communal activity.

"When we consider that the annual turnover in health officers is about 14 per cent in cities, that the health officer's term of office is from 25 to 50 per cent shorter than that of the superintendent of schools, the fire chief, or the city engineer, and that the superintendent of schools receives on an average from 25 to 50 per cent more salary than the health officer, it indicates that we have not yet generally given the place to public health that we have to some other necessary lines of civic effort and community betterment. But progress is being made, and the results following the effort are justifying the increased expenditures and the added interest of the people.

"What in general are some of the evidences of progress in public health as they come under our observation?

"There is the general decline in the diseases for which we have some fairly definite antidote or other means of prevention and control. In urban districts there has recently been considerable advance in the way of providing better local personnel and equipment for the carrying on of health work. The organization of full-time health service for the rural sections goes on apace, with no mushroom growth, but as a steady, substantial increase. It is true that only 19 per cent of all our rural population is as yet protected by what might be regarded as adequate health service, but the growth in the service has been commendable. In 1920 there were only 109 full-time county units; each year has seen additions until at the beginning of 1928 there were 414. Forty-eight additional units have been added in the first eleven months of 1928."

Dr. John R. Monger, State Health Commissioner of Ohio, in talking on the control and prevention of diphtheria, said in part, "I firmly believe that the control of preventable diseases is primarily one of organization. We have at our command definite, positive methods of control of several individual diseases. We know that eventually diphtheria, typhoid, and smallpox and probably many other diseases will be medical curiosities. Now, how can he apply these methods promptly, is the big question facing the health officer.

"The big thing that confronts the health officer is first of all education, and effective

education can only come through thorough organization.

"We now have one-third of the child population of Ohio at the most susceptible age period—one to ten years—immunized. Other states last year and this year are having the expected rise, the peak of which occurs every six or seven years. Ohio's diphtheria morbidity and mortality curve, instead of rising, is decreasing, and while dreams do not always come true, every health official in Ohio believes this one will.

"This drives home my point that communicable disease control is based on organization. Had it not been for organization we could not have had 1 per cent immunized. The technique is simple.

"First, the local health department is interested, and they get into their budget a sum large enough to buy the toxin-antitoxin. Next the County Medical Society is appealed to. We are perfectly frank with them, and in nearly every instance they back it up.

"Next, the school authorities are interested. Contact is made with parent-teacher organizations, local public health organizations, women's clubs and other organizations likely to be interested. We have an automobile health exhibit, with movies and a generator, that we may show movies in schools, churches, and clubs. This exhibit is accompanied by a trained lecturer and a movie operator.

"The press is appealed to, and suggested editorials and articles are furnished to them. Trained physicians teach the health officer the technique of Schick testing, reading, and immunization.

"In country schools anywhere from 300 to 800 are done in a day, and in centralized and city schools from 1,000 to 1,200 are done. One man did 1,700 immunizations in one day. In over 500,000 immunizations we have not had a single serious result.

"In 1923, we had in round numbers 10,000 cases; 1924, 6,000 cases; 1925, 5,000 cases; 1926, 6,000 cases; and 1927, we had 6,000 cases. The average number of cases per year for the 11 years prior to and including 1923, is over 10,000, and for the 4 years, 1924 to 1927, is 6,200 cases per year. If you take the increase in population, the comparison is even more graphic. One-third immunized and over 33 1/3 per cent reduction. These figures are for the entire state.

"Taking the 20 counties that have done the most immunizations, the reduction is 49 per cent. And in a group of counties having the least immunization, and with a comparable population, there was an increase of 109 per cent. I think this emphasizes my statement that the control of diphtheria, and, for that matter, all preventable diseases, is a matter of education and organization. The basic policy under which we operate is that public health should in no instance impinge on the field of work of the doctor by giving free treatment, and that all our work shall be education and demonstration, except, of course, the treatment of indigents."

SMALLPOX IN 1928

Smallpox has been at low ebb in all parts of the state during the entire year of 1928. The number of cases reported has been less than during any previous year, and there has not been a single death from this disease. The scarcity of cases and the absence of deaths is making certain people of the state careless of their immunity status. As a direct result of this, a large susceptible population is developing which will furnish fertile soil at some future time. The fact that the cases are all very mild and occasionally atypical presents diagnostic difficulty.

Six such cases recently occurred in Howell. On the basis of these cases the health officer vaccinated all unvaccinated children attending the public schools, and advised all citizens that they should be vaccinated or revaccinated. As a result of this, all the school children and about six hundred others were vaccinated. It is pleasing to note that there was no hysteria connected with all of this work. The local physicians did the work in their offices as a matter of protecting their families against the disease. One case was traced to Fowlerville, which is nine miles away. The same general procedure was carefully carried out there, much to the satisfaction of the business men, who did not want any undue excitement and wild tales about health conditions in their village. Several cases were also found in Bancroft. The same general procedure was carried out there.

D.M.G.

TULAREMIA

Tularemia is arousing a good deal of interest in Michigan, as in other states. A recent letter to physicians dealt at some length with this disease.

"Tularemia is a disease that has recently come to the attention of physicians in Michigan. Hunters are reporting that rab-

bits are occasionally found with white spots on the liver and with other evidences of not being in good health.

"Tularemia is a disease to which both man and rabbits are susceptible. It is caused by a germ known as bacterium tularence. The causative agent of this disease was given this name after an epidemiological study of cases in 1912 made in Tulare county, California. The disease was not recognized at that time in other parts of the United States, but as knowledge of the disease has spread, cases have been found in most all states of the middle west and the upper Mississippi valley. The United States Public Health Service announces that reports of cases have been received from thirty-seven states, the nine northeastern states being the only large area where the disease has not been found.

"Tularemia is essentially a contagious disease of rabbits. The lesions in the rabbits are small white necrotic foci in the liver and spleen, usually accompanied by swelling of these organs. The lymph glands of the axilla and groin show inflammation and occasionally some necrosis. Rabbits showing any of these signs should be taken care of by being burned or buried, without skinning or handling. The organism does not survive long at freezing temperature. Some states have required that rabbits shipped from the states known to harbor the disease be held in cold storage 30 days before being put on the market.

"Tularemia in man is a febrile disease, frequently having many symptoms similar to typhoid fever. The acute attack lasts from a few weeks to a month, or longer. The disease is a bacteremia due to invasion of the B. tularence through an abrasion in the skin. There is usually an ulcer at the portal of entry, but this may be so slight as to escape the notice of the patient. This is usually found on the hands of some individual who has been cleaning or handling rabbits. The lymph channels draining the ulcer are occasionally inflamed, and show red streaks up the hand or arm. The glands at the elbow and axilla are frequently enlarged and occasionally require opening and draining. Other symptoms are frequently like typhoid. The convalescence is always slow. Frequently the patient requires three to six months to affect a complete recovery. Agglutinins form in the blood fairly early in the disease. These agglutinins can be identified by laboratory procedure.

"Tularemia blood specimens should be sent by physicians to the Michigan Department of Health in the usual blood container furnished for that purpose."

Guy L. Kiefer, M.D., D.P.H.

BIOLOGICALS FOR THE PREVENTION AND TREATMENT OF SCARLET FEVER

Inquiries are constantly being received from physicians as to the department's distribution of biological products for the prevention and treatment of scarlet fever, and the use of such products. A letter explaining this was sent recently to all physicians, and is reprinted here for the benefit of doctors not on our mailing list.

"The Michigan Department of Health manufactures and distributes to physicians, free of charge, the following biological products for the prevention and treatment of scarlet fever. These scarlet fever biological products will be sent to the physicians of the state when requested by letter or telegraph.

Toxin: Scarlet fever streptococcus toxin is available for distribution for active immunization. This material is usually sent to physicians in three 10 c.c bottles. Immunization is obtained by administering 1 c.c. from the bottle labeled "First Dose", this is followed in two weeks by 1 c.c. from the bottle labeled "Second Dose", then 1 c.c. from the bottle labeled "Third Dose". It is not advisable to give scarlet fever streptococcus toxin to persons in less than seven days after they have been exposed to a case of scarlet fever. Immunity develops in from three to six weeks and lasts for a period of years.

Antitoxin: Scarlet fever streptococcus antitoxin is used for the treatment of cases. We are manufacturing antitoxin, at the present time, in small quantities only, on account of insufficient funds, but we make every effort to take care of requests. This material is particularly helpful in the malignant or toxic case. The entire contents of the syrings is one therapeutic dose. Observe daily all persons exposed to cases. If symptoms appear, give full therapeutic dose of antitoxin and abort the same. This antitoxin may also be used for passive immunity. This immunity is of short duration and is not effective for more than three to six weeks, nor is it advised for persons wishing permanent or lasting immunity. Therefore, use this only for persons who are continuously and intimately exposed, during the time of their exposure.

Dick Test Material: Quite a large proportion of children of school age are found

to be immmune to scarlet fever; therefore, it is found to be quite a saving of time and material to do the test on all persons before giving scarlet fever streptococcus toxin. In from three to six weeks after giving scarlet fever streptococcus toxin it is good practice to give a Dick test in order to determine the degree of immunity that has been established. The Dick test material is administered by the same technic as the Schick test."

Guy L. Kiefer, M.D., D.P.H.

THE USE OF BACTERIAL PROTEINS AS MADE SALUBLE BY THE BACTERIOPHAGE FOR PURPOSES OF IMMUNIZATION AND TREATMENT

The bacteriophage principle was discovered in 1917 by d'Herelle, who considered it a living being capable of attacking and of dissolving bacteria. That such a principle should have therapeutic value was at once suggested and bacteriophage has been used extensively as a method for treating many infections including typhoid fever.

In all cases bacteriophage has depended for its support as a therapeutic agent upon its dissolving action. The conception has been that bacteriophage itself was responsible for the results obtained. It was also known that bacteriophage by its dissolving action left the bacterial proteins in solution. That these dissolved proteins could produce antibodies in much the same manner as killed bacterial vaccines was also shown. That the dissolved proteins were the active principle in the product used I have maintained for years and have specifically mentioned in articles published in 1927 (J. Michigan State Medical Society) and in January 1929 (American Journal of Public Health).

I have shown that the bacterial proteins of Bacillus typhosus, B, Paratyphosis A and B after dissolution by the bacteriophage can produce the same antibodies in human subjects as can vaccines and consider this as evidence that the same product can and does protect an individual against typhoid fever.

It is desired that a patent be obtained to cover the use of bacterial proteins as dissolved by the bacteriophage for the treatment and prevention of infectious diseases, specifically typhoid fever and staphylococcus infections.

That these proteins and the bacteriophage itself are separate and distinct has been shown by numerous investigators. It is possible to separate them and to use bacteriophage itself for therapeutic purposes.

N. W. Larkum, Ph.D., Immunologist.

PREVALENCE OF DISEASE

January Report
Cases Reported

	December 1928	January 1929	January 1928	Av. 5 yrs.
Pneumonia	1,007	1,752	484	651
Tuberculosis	414	361	404	430
Typhoid Fever	18	16	24	34
Diphtheria	420	430	362	528
Whooping Cough	914	628	594	597
Scarlet Fever	1,083	1,243	1,091	1,381
Measles	311	531	1,539	1,971
Smallpox	105	104	168	225
Meningitis	35	87	10	13
Poliomyelitis	3	4	7	5
Syphilis	1,102	1,536	1,496	1,186
Gonorrhea	661	927	855	801
Chancroid	4	8	12	14

CONDENSED MONTHLY REPORT

Michigan Department of Health Laboratories

	+	—	+—	Total
Lansing Laboratory—				
Throat Swabs for Diphtheria				1228
Diagnosis	26	342		
Release	105	165		
Carrier	28	542		
Virulence Tests	11	9		
Throat Swabs for Hemolytic Streptococci				820
Diagnosis	144	106		
Carrier	49	521		
Throat Swabs for Vincent's	44	324		368
Syphilis				7830
Kahn	1287	6473	65	
Wassermann	1	4		
Darkfield	1			
Examination for Gonococci	121	1131		1252
B. Tuberculosis				608
Sputum	57	485		
Animal Inoculations	6	60		
Typhoid				86
Feces	3	28		
Blood Cultures		16		
Widals	6	29		
Urine		4		
B. Abortus	1	74		75
Dysentery		31		31
Intestinal Parasites				14
Transudates and Exudates				211
Blood Examinations (not classified)				168
Urine Examinations (not classified)				305
Water and Sewage Examinations				537
Milk Examinations				86
Toxicological Examinations				
Autogenous Vaccines				3
Supplementary Examinations				217
Unclassified Examinations				748
Total for the Month				14587
Cumulative Total (fiscal year)				102513
Decrease over this month last year				696
Houghton Laboratory—				
Examinations made — Total for the month				1373
Cumulative Total (fiscal year)				10311
Decrease over this month last year				787
Grand Rapids Laboratory—				
Examinations made — Total for the month				6638
Cumulative Total (fiscal year)				44825
Decrease over this month last year				966
Typhoid Vaccine Distributed, c. c.				1410
Diphtheria Antitoxin Distributed, units				33313000
Diphtheria Toxin Antitoxin Distributed, c. c.				25770
Silver Nitrate Ampules Distributed				7304
Scarlet Fever Antitoxin Distributed, pkg.				62
Scarlet Fever Toxin Dick Test Distributed, c. c.				1110
Scarlet Fever Toxin Immunization Distributed, c. c.				2651
Smallpox Vaccine Distributed, pts.				9580
Bacteriophage Distributed, c.c.				2402

XUM

THE JOURNAL

OF THE

Michigan State Medical Society

PUBLICATION COMMITTEE

J. D. BRUCE, M. D., Chairman.....Ann Arbor
B. F. GREEN, M. D.....Hillsdale
B. H. VAN LEUVEN, M. D.....Petoskey

Editor
J. H. DEMPSTER, M. D.,
641 David Whitney Bldg., Detroit, Michigan.

Business Manager
FREDERICK C. WARNSHUIS, M. D., D. Sc.
Grand Rapids, Michigan.

All communications relative to exchanges, books for review, manuscripts, should be addressed to J. H. Dempster, M. D., 641 David Whitney Bldg., Detroit, Michigan.

Contributors are responsible for all statements, conclusions and methods in presenting their subjects. Their views may or may not be in agreement with those of the editor. The aim, however, is to allow authors as great latitude as the general policy of The Journal and the demands on its space may permit. The right to reduce in length or to reject any article is reserved. Articles are accepted for publication on condition that they are contributed solely to this Journal.

All communications regarding advertising and subscriptions should be addressed to F. C. Warnshuis, M. D., Suite 1508 Grand Rapids National Bank Bldg., Grand Rapids, Michigan.

MARCH, 1929

"I hold every man a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavor themselves, by way of amends, to be a help and ornament thereunto."

—Francis Bacon.

EDITORIAL

POST-GRADUATE PROGRAM

Elsewhere in this number of the Journal of the Michigan State Medical Society will be found a tentative program for a post-graduate course in medicine and surgery beginning the latter part of May. This program is given by the Department of Post-Graduate Medicine, University of Michigan in conjunction with the Michigan State Medical Society. A considerable part of the clinical work will be given in Detroit where the department of post-graduate medicine has decided to limit the course for the time being to one in medicine and one in surgery which courses will run approximately one hundred and twelve hours each, beginning May 27th and continuing for four weeks from 9:00 in the morning to 1:00. There will also be given laboratory work to the extent of about twelve two-hour periods. A course in surgical anatomy will be given. The headquarters for the work will be Receiving hospital, Detroit. Other Detroit hospitals where special advantages may be obtained, will also share in the program.

It is also announced that courses of varying lengths have been arranged to begin about April 1st at Ann Arbor, namely in the department of roentgenology and also in serology and laboratory technique. In these courses Dr. P. M. Hickey and Dr. Kahn will be the instructors. More detailed information will appear in the April and May numbers of this Journal and may be obtained also on application to the Department of Post-Graduate Medicine, University Hospital, Ann Arbor.

A CAUSATIVE FACTOR IN DIABETES MELLITUS

Increasing consumption of sugar is considered on good authority as one of the causes of diabetes mellitus.* Sugar is a comparatively recent article of diet. While grape sugar was known in Roman times it did not appear in sufficient quantity to assume any important role as a food stuff. It was not until the seventeenth century that it came into somewhat common use and then was confined pretty much to use in tea and coffee. In the year 1800 it was estimated the consumption of sugar did not exceed eight pounds per person per annum. According to an estimate made by the food research institute of the Leland Standford University, in 1820 the yearly consumption of sugar was about 17 pounds per person. In 1923 it was 120 pounds per capita. The sugar production for the world for the year 1927-28 is estimated to be over twenty-five million tons or an increase of a million and a half tons over 1926-1927. Perhaps this has also something to do with the increase in demand for dentists.

With the increased consumption of sugar there has been also a marked increase in the prevalence of diabetes mellitus especially during the last sixty years. It is possible that this is more than a coincidence. The death rate from diabetes in the United States, according to the New York Department of Health, has increased from 2.1 per 100,000 of population in 1870 when the consumption of sugar was estimated to be 32.7 pounds per person to 16 per 100,000 population in 1924.

* A. B. Macallum, Canadian Medical Association Journal, January 1929.

XUM

It has also been noted that of the average number of deaths in New York, of 1359 in the five-year period from 1923 to 1927, 873 were those of females and 486 of males. The assumption here is that females consume a larger quantity of sugar than do males. Diabetes had become generally recognized in the sixteenth century. Now the diagnosis and prescription of treatment have been reduced almost to an exact science. Commenting on the situation Dr. Macallum** says:

"That excess in the carbohydrate portion of the daily diet can be postulated as a factor in the causation of diabetes mellitus appears from certain theoretical considerations. The utilization of the blood sugar by the body tissues is wholly dependent on the normal functioning of the islets of Langerhans which produce the endocrine, insulin, which dominates this utilization. This production cannot be a haphazard one. It must be in response to some stimulation by sugar directly on the islets, or through action on them of a hormone generated in the intestinal mucosa, as secretin is which promotes the secretion of the pancreatic juice, and as is gastrin, formed in the mucosa of the pylorus to stimulate the mucosa of the cardiac portion of the stomach to secrete gastric juice. If a hormone for the islets is formed in the intestinal mucosa under the stimulation of sugar, a constant and excessive action of the latter would lead to exhaustion and, ultimately, to degeneration of the islets and result in diabetes."

Not all cases of diabetes mellitus arise through excessive consumption of carbohydrates, for instance, those of early childhood are undoubtedly due to bacterial toxins affecting the islands of Langerhans.

There is no intention here to point a moral or adorn a tale, further than stating that here is one factor in the causation of diabetes that is capable of being controlled. It is a matter for moderation. Nor does the solution of the problem of too much sugar lie in "reaching for a cigarette."

COORDINATING MEDICAL RESEARCH

There is a bill before congress the purpose of which is to establish a national institute of health which would be under the control of the surgeon general of the United States Public Health Service. The purpose of such an institute is scientific research relating to the cause and prevention of disease. According to the report of the senate committee which has approved the bill, "The plan of the institute is to make a great co-operative scientific organization in which leading experts in every branch of science will be brought together and given opportunity to work in unison for the purpose of discovering all the natural laws governing human life, and especially to learn those variations of such laws which are detrimental to human health."

No one will deny the importance of such an institution. The day of the lone worker is past. Big things are accomplished by team work. The industries have taught us this fact.

There is a large place in the scheme of coordination for the medical profession from the county societies to the American Medical Association. Many physicians are qualified for research. The larger number, however, can aid in clinical research "The medical organizations of the country" comments the Pennsylvania Medical Journal editorially, "owe it to themselves and to their clients to establish a protectorate in health research. Cooperation with governmental agencies, foundations, and lay organizations is not only desirable but imperative; but the initiative should arise from the medical societies. Theirs is the responsibility and theirs is the privilege. This does not mean that the medical societies must necessarily finance a large program of research work. If the machinery were provided, the financial support would be forthcoming from the the many individuals interested in this type of work."

SCARCITY OF PSYCHIATRISTS

There are about 800,000 beds in all the hospitals of the United States, one-half of which number are in mental disease hospitals. Of the 149,000 physicians in this country it is estimated that not more than 2,000 are skilled in the treatment of mental diseases. Evidently the ministering to minds diseased has not been looked upon as an attractive specialty. The fact is that medicine as usually taught is materialistic; it is concerned as a rule with organic or demonstrable pathology. Psychiatry demands a thorough training in normal psychology just as medicine is based upon a knowledge of physiology and physiological chemistry. Psychology itself is so youthful that one hardly knows what to include in the term, Freudian psychology, or behaviorism as interpreted by its chief exponent Watson, or the traditional psychology of the colleges. The mind is

** Loc cit.

XUM

hard to fathom, yet there seems a future for what is termed mental hygiene, that would at least prevent borderline cases from developing into psychopathic states. with the development and stabilizing of normal psychology we may hope for a greater number of competent psychiatrists.

There should be a course in psychiatry, if we dare use the term for what we mean to convey, given to the undergraduate students in medicine. It should be elementary and not calculated to fit the student for specialism in the subject. It should be concerned with the known facts and should be taught as part of the course in internal medicine. Psychiatry as a specialty is probably further removed from internal medicine than those departments which are considered distinctly surgical. With the trend of modern life towards hurry and worry, greater and greater demands are being made upon the nervous system with consequent tendency to the production of neuroses. An elementary course as suggested would tend to eventually increase the number of psychiatrists for whom the specialty is at present a closed field.

PENNY-IN-THE-SLOT-DIAGNOSIS

A movement is on foot to provide the city of Chicago with a pay clinic, the function of which is to be diagnostic, not therapeutic. A prominent Chicago millionaire has expressed a desire to subsidize heavily such an institution if space can be provided for it on the grounds of one of the universities. It is suggested that the diagnostic work be done by the faculty of the medical school who are on salary and the ready made diagnosis go with the patient to his family doctor who will prescribe the treatment. Treatment it is presumed will remain the function of the physician in general practice.

Such a course would eventually eliminate a certain class of medical specialist namely the laboratory specialist, but it would not materially cheapen medical service as designed by the originators of the scheme. The divorcing of diagnosis from the direct care of the patient would be highly undesirable for both patient and physician, partly because diagnosis and treatment should go hand in hand, and treatment should be changed or varied depending on the patient's condition. The finality of diagnosis must always rest with the clinician and never with the laboratory worker.

RABIES

In this number of the Journal there appears a complete symposium on the subject of rabies which is discussed by a clinician, the chief of the Pasteur Institute, Ann Arbor, a pathologist, a veterinarian, and physician representing one of the largest pharmaceutical houses in the world. One commonly associates rabies with so-called "dog days" and no one ever thinks of dog days apart from late July or August. Many of our readers will be surprised to know that rabies is a disease which is apt to be at its height in the early spring months. There are many factors at present which tend to increase the spread. The automobile and the tourist must be reckoned as factors, in as much as so many automobiles traveling through the country carry dogs. The disease is transmitted to other animals and too often has its human victims.

The writer who was present and heard the symposium and has read the papers as they appear here, has to confess his surprise as to the real menace of hydrophobia has become in this state. The dog has been for generations, perhaps centuries, a companion to man and there is little use in advocating the elimination of dogs as a means of overcoming the menace. The attention of the reader is called to the importance of vaccination of pets and particularly of dogs, for the protection of not only children and adults but likewise of the animals themselves.

BEAUMONT LECTURES

The Beaumont lectures are delivered each year in Detroit under the auspices of the Wayne County Medical Society. The expense of the lectureship is defrayed by a fund set aside during the war and by mutual consent of the donors appropriated for the purpose mentioned. The name Beaumont is known to every physician in the state of Michigan. It is significant that the seven lectures already given have been on some aspects of physiology, which had not up to the time found their way into the textbooks. This lectureship is a fitting memorial to a man Osler called the "backwoods physiologist."

The lecturer this year is Dr. Richard of Philadelphia who has done outstanding work on the kidney which might be styled "Never Aspects of Renal Physiology." The date for the Beaumont lectureship is a month later than usual, namely Monday and Tuesday the 25th and 26th

of March. The first lecture will be on Monday evening, the second of the series Tuesday, 11-12 a. m. and the third lecture Tuesday evening. A cordial invitation is extended to the members of the Michigan State Medical Society to be present at these lectures. The subject is one of paramount interest which has a wide appeal.

SAYINGS OF A SEPTUAGENARIAN

Probably there is no man better known to the profession of this state than Dr. C. B. Burr of Flint, Michigan, who has proved himself a real friend of this Journal. Dr. Burr is blessed with a happy faculty of thinking inspirational thoughts and expressing himself in an epigramatic style which arrests the reader's attention and puts him in good humor. In Dr. Burr's moments of relaxation he has penned a very delightful brochure which he has called, "Sayings of a Septuagenarian;" and it must not be forgotten though Dr. Burr has retired from active work, his profession as neurologist and psychiatrist, he has by no means been idle, as the voluminous work the new History of Medicine in Michigan is ample evidence. We take great pleasure in presenting Dr. Burr's philosophy to the readers of this Journal.

* * *

Aptitude frequently falls far short of aspiration.

* * *

The borderline 'twixt faith and fanaticism is indistinct. Likewise that between salutary self-interest and sordid self-indulgence.

* * *

Relative value of sense and sentiment are not determinable. So-called thinking is too often an expression of emotional response and bears small resemblance to weighing, measuring and comparing.

* * *

Application and applause are healthful and stimulating, adulation and hurrahs wasteful and inexpedient. The output of emotionality among Americans requires stabilizing. In such event it would carry farther and be more effective for happiness.

* * *

Notwithstanding so-called "forgiveness," the buried impression of a rank injustice will be revivified from time to time.

* * *

Therefore, to "ignore" as far as possible, and through exercise to develop a helpful sense of humor in an irritating situation, constitute the wiser policy.

* * *

Perfection is obviously unattainable, and would be objectionable if attained, through alienating human and neighborly interest from its possessor. The recognition of kinship in faults is unifying.

* * *

Philosopher and peasant are alike completely ignorant of the remote past and of the entire future—of beginning and of the end.

Many phenomena are apparent to the former and relatively few to the latter. They may be interpreted on the basis of trained observation in the one case or dense superstition in the other.

As to the ultimate causes, all is speculation in either case. These pertain to the realm of the unknowable.

* * *

Faith that, literally, can move mountains, is in disaccord with human experience. Nothing aside from earthquakes has proven itself competent for this undertaking.

* * *

Confusion in the use of the terms "faith" and "belief" is almost universal. Simple "faith" is closely related to human happiness. The falsely so-called "belief" is on the contrary often arrogant and impels to bellicosity and intolerance.

Cynicism, subtly employed, is often mistaken for argument.

* * *

Of many commonly used words, it may be said that they represent no actual human experience. "Consistency," for example, was never in completeness attained in a human life. It is rarely exemplified in conduct or in the man-made laws governing behavior and determining judicial procedure.

"Equality" is another. There is no equality in brain, in physique (even twins may be differentiated), in aptitudes, in accomplishment, even in opportunity. One's life is his own and environment of two individuals in the same family is not identical. Furthermore, no two objects in nature or art are "equal." This might seem like hair-splitting except for a recent concrete example—the claim of Japan before the formulators of the League of Nations for racial equality.

Is the so-called "culture" among white races universally regarded "superior"? Direct this interrogatory to a Chinese or Hindu philosopher and observe the reaction—a shadow of cynicism over a placid physiognomy.

EDITORIAL NOTES

Abraham Colles born 1773, died 1843, was professor of surgery for 32 years in Dublin, Ireland. He is perhaps most widely known for his original description of the fracture of the carpal end of the radius which bears his name.

SEA FEVER

I must down to the seas again, to the lonely sea and the sky,
And all I ask is a ship done up to look like the land that's dry,
With a palm lounge and a ballroom floor and the loose legs shaking,
And a bedroom suite with a bath complete and a bed for the morrow's waking.

I must down to the seas again, for the call is come from afar,
I can hear the tinkle of ice again in Ye Olde Englyshe Cocktaile Barre;

And all I ask is a man's hand (say, "three no trumps" or over),
And a partner with sense to understand that we're both of us well in clover.

I must down to the seas again, to the mariner's restless path,
Where the radiators line the way to the Cafe and Turkish Bath;
And all I ask is for marble halls with an orchestra skilled and tireless,
And a square meal and an arm chair and the news of the day by wireless.

—Manchester Guardian.

With apologies to John Masefield.

Those who cross the Atlantic on medical pilgrimages will appreciate this parody on Masefield's rugged poem.

WHAT YOU OWE

(The Wisconsin Medical Journal)

"I hold every man a debtor to his profession," said Bacon.

A profession is not something you join casually as you would a club, or a business organization. It isn't for joiners at all. There is no question of deciding periodically whether to renew or resign. Once in, you are in for life, generally speaking. You accept the tenets of the profession and in doing so, you enter into partnership with all the other members. Above every selfish gain is the obligation to serve the profession, its doctrines, and its members as they serve you. It may be a bit bromidic to add that there is a great and selfish joy in serving one's profession. Serving for the glory of the profession, not for one's own glorification and for a narrow and immediate profit.

Live we must. And living reasonably well and befitting the status of a professional gentleman is an obligation to that profession. But this is a far cry from the practice of one's profession as a trade or business, or of estimating honor by the distance one gets on financially. And inasmuch as the business interests of our vocation are advanced beyond their reasonable consideration so do the professional interests recede.

COMMENDS M.S.M.S. STUDY OF HOSPITAL PROBLEM

(The Wisconsin Medical Journal)

To those who are interested and who are honestly anxious to arrive at an understanding and to form an unbiased opinion I would suggest obtaining a copy of the final report of the committee, "To Survey and Study the Problem of Hospital Charity in Michigan Hospitals," appointed by the Michigan State Medical Society. Conditions in Michigan are very similar to those in Wisconsin. The Michigan committee has done valuable work and is to be complimented. A knowledge of the committee's analysis of conditions in its state will illuminate our own and would lessen adverse criticism in our state materially. It will make for a deeper insight and would make an impartial solution of our own problems much easier. Please get one of those reports and study it, so that when this subject again is brought up for discussion, we all may be well acquainted with the facts—President Wisconsin Medical Society.

THE COST OF SICKNESS

(Calhoun County Medical Bulletin)

Medical men as well as the world at large are keenly interested in the cost of being sick. It is not only a medical problem, but it is economic, as well as social. Sickness is getting to be a luxury. The poor cannot afford it, and the great middle class of wage earners find it a burden. As it stands at present the doctor and the hospital are standing the expense of the sick poor. The rich are made to contribute somewhat to the load of both the doctor and the hospital. But this puts the doctor in a bad light with an intelligent class who knows they pay more than their share. The high cost of being sick is forcing the public into the idea that sickness pays no dividends, and the sooner it sets about seriously to study applied sanitation and disease prevention the sooner relief will come to an ailing world. If the money expended today in relieving preventable disease and suffering could be diverted into public health education and disease prevention the problem of the cost of sickness would be largely solved.

TECHNICIANS REGISTRY

In accordance with the trend of the times, the practice of medicine is utilizing more and more the services of trained lay help. The advent of the laboratory as an indispensible aid to the diagnosis of disease has created a new specialty in medicine; that of clinical pathology. In order to carry on the numerous technical tests required in scientific diagnostic procedures, the laboratory director has found it necessary to train the technical personnel. With the standardization of hospitals and the urgent call for qualified laboratory assistants there has arisen a demand for proper standardization of the preliminary education and technical training of those enrolled in this new profession. There has also been a desire on the part of those engaged in this useful calling to raise their status, similar to the evolution of the trained nurse of a generation ago. This want in now being taken care of by a national organization consisting of a body of men who are most vitally interested in elevating the intellectual and technical status of laboratory workers. The American Society of Clinical Pathologists has taken upon itself the task of organizing a registry of technicians with rules under which those qualified by education, technical instruction, and moral character will receive a certificate.

The subject is of interest to physicians in every field of endeavor as many of them are desirous of securing the services of technicians to carry on the routine laboratory procedures.

There is no doubt that the elevation of the laboratory technician to the status of a respected and useful calling will be a great help to the medical profession, to the patient, and to the scientific practice of medicine.

The headquarters of the registry of technicians of the American Society of Clinical Pathologists are located in the Metropolitan building of Denver, Colo.

Another very desirable feature of the registry is the facilities it offers in finding suitable placement for registrants and in aiding physicians to find desirable applicants.

Any technician who is interested in joining with Dr. R. G. Owen, local registrar, 507 Stroh Bldg., Detroit, Mich.

XUM

NEWS AND ANNOUNCEMENTS

Thereby Forming Historical Records

Dr. R. R. Smith, Grand Rapids, spent part of January and February in Arizona.

Dr. F. C. Warnshuis, Grand Rapids, has been appointed as medical director of the Professional Underwriters Corporation Insurance company.

Dr. R. F. Webb, Grand Rapids, was selected as chief of staff, Butterworth hospital for a two-year term, commencing February 1st.

Dr. and Mrs. N. A. Herring of Niles, Michigan, are spending part of the winter at San Antonio, Texas.

Dr. W. H. Marshall of Flint, Michigan spoke on the subject "Pain in Relation to Heart Disorders" before the Jackson County Medical Society on January 22nd.

Dr. J. D. Bruce, Ann Arbor and Dr. B. R. Corbus, Grand Rapids, are listed among a goodly number of Michigan doctors "Hooverizing" in Florida for a few weeks.

Dr. L. J. Hirschman, president of the Michigan State Medical Society broadcasted a health lecture at the American Association headquarters in Chicago over station WBBM on the subject of the "Treatment of Rectal Diseases by the Irregular."

Dr. George E. McKean and Dr. L. J. Hirschman of Detroit are on the program of the Muncie Academy of Medicine, Muncie, Indiana. Dr. McKean January 15th for the subject "The Treatment of Pneumonia," and Dr. Hirschman for March 5th.

Dr. Carl Huber, dean of the graduate department of the University of Michigan addressed the Calhoun Medical Society at the annual meeting of the society. His address dealt with the historical development of the medical department of the University of Michigan.

The first regular monthly meeting of the Washtenaw County Medical Society for 1929 was held January 30th, at St. Joseph's Mercy hospital, Ann Arbor, Mich. The program discussed "The Present Status of the Serum Diagnosis of Syphilis," by R. L. Kahn, M. D., Sc. D. The discussion was held by Doctors Margaret Armstrong and Cyrus C. Sturgis.

RECENT GRADUATES OF DETROIT COLLEGE OF MEDICINE

Dr. Donald C. Beaver, who has been second assistant in the department of pathology, has received the appointment of first assistant in pathology at the Mayo Clinic under Professor Robertson.——Dr. Watson Beach has recently received his master's degree of surgery from the Mayo Foundation.——Dr. Notery Gleason is a candidate for the degree of Ph. D. in dermatology at the Mayo Foundation.——Dr. Catherine Corbeille is a candidate for the Ph. D. degree in physiology. Her thesis will concern the physiology of sound and its application as a therapeutic measure.——Dr. Harold Kuhlman is a candidate for a degree in internal medicine.

The gold medal of the Phi Lambda Kappa Fraternity, Incorporated, with a substantial cash prize was won by J. H. Masserman who presented the same thesis in this competition that was offered for graduation in pathology. The subject selected was "The Pathology of the Thyroid Gland." There were 32 competitors from as many states who took part in the contest. The medal was presented by Professor Schamberg at Philadelphia. In the presentation address Professor Schamberg chose to remark that the award and the thesis were well fitted for a man who had been long in the medical profession. It is particularly gratifying that Mr. Masserman was awarded the medal because the entire work was done during a period of illness which compelled him to go to California for a considerable length of time.

DEATHS

DR. GEORGE S. NEY

Dr. George S. Ney an honorary member of the Saint Clair County Medical Society passed away at his home in Port Huron, Mich., Thursday, January 24, 1929.

Dr. Ney was born near Guelph, Ontario, Canada, March 14, 1854. After attending school near his home he became a teacher for four years. After attending lectures at the Toronto School of Medicine, Dr. Ney went to New York city to complete his education at the Bellevue hospital.

Dr. Ney came to Saint Clair County in 1880 and after practicing medicine and surgery for about 15 years at Yale moved to Port Huron. During the past 33 or 34 years he has lived and practised medicine and surgery in Port Huron. Miss Ada E. Ney and Mrs. Frank L. Ryerson, daughters survive Dr. Ney.

Dr. Ney was beloved and respected by many professional associates. His sterling honesty and conservatism in the practice of medicine together with his rare surgical ability built for him a splendid reputation in his home community.

His many associates in the Saint Clair County Medical Society will long revere his memory.

DR. HENRY BISHOP LANDON

Dr. Henry Bishop Landon died January 15th at the home of his son Dr. Herbert W. Landon of Monroe, Mich. He had attained the advanced age of 88 years. The cause of death was bronchial pneumonia. Dr. Landon had practised medicine for over a half a century at Bay City. He received his early education in the Monroe schools

and had taught school before entering the University of Michigan where he obtained his B. A. in 1861. This year he entered the Seventh Michigan Volunteer Infantry as a first lieutenant. He took part in several battles during the early months of the Civil War, where he was severely wounded at the battle of Fair Oaks. On recovery he again entered the University of Michigan where he graduated in medicine. He practised five years in Denver before locating in Bay City as mentioned. Dr. Landon was a member of the Military Order of the Royal Legion, a charter member of the Michigan State Medical Society, and a member of the American Medical Association. He was twice married. Of the four children, three of his first marriage, and one of his second, only one Dr. H. W. Landon survives. The remains were cremated at the Woodmere crematorium in Detroit, Mich.

COMMUNICATIONS

PRESIDENT RESPONDIT

The President of the Michigan State Medical Society has received a letter from Dr. S. G. Jett of the department of Public Health of Reidsville, North Carolina, urging the broadcasting of a message from Dr. George F. Buchan, a prominent British physician who has returned after touring the United States. The message is as follows:

"I have just toured the states, investigating the public health conditions in America. I noticed that many people finished their meal with sweets. This is hygienically unsound as sweets stick to the crevices and get in between the teeth and lead to fermentation and dental decay.

"The correct way to finish a meal is with fruit, coffee and a cigarette. The fruit hardens the gums and cleans the teeth; the coffee stimulates the flow of saliva in the mouth and acts as a mouth wash; while finally the cigarette disinfects the mouth and soothes the nerves."

This has inspired the following communication from Dr. Hirschman:

S. G. Jett, M.D., Commissioner,
Dept. of Public Health,
Reidsville, N. C.
Dear Dr. Jett:

As President of the Michigan State Medical Society I wish to acknowledge your letter of December 18th addressed to one of my predecessors, Dr. Jackson.

I am very much interested in the opinion of Dr. Buchan of London, and his conclusions are rather amusing to one who has been in close contact with many of his country-men.

His statements will undoubtedly be very comforting to vendors of fruit, coffee and cigarettes. I will await with interest the quotation of his statements in advertising matter of some of these interests.

If many of our British friends were as familiar with the tooth-brush and its uses as our citizens have been taught by oral hygienists, he would not have made the statements which you have so kindly sent me.

From ocular and olefactory evidence I can assure you that there is a great field for tooth and mouth hygiene in Great Britain.

I should hesitate very much to ask the growing youth of America to discard the tooth-brush and replace it with a cigarette.

Louis J. Hirschman, M. D.

F. C. Warnshuis, Secretary of the Michigan State Medical Society:

In reply to your letter of January 18, regarding impressions received at our last conference of County Secretaries, held at the headquarters of the American Medical Association in Chicago.

I want to express my hearty approval of the wisdom of the plan to have held this conference at A. M. A. headquarters. I previously had a faint idea of what our A. M. A. meant to the medical profession of the United States, but not until I had seen all the different departments and viewed at close range how hard and earnestly these employes of the medical profession of the United States are working for the interests of the physicians of the country, as well as to advance the health of the general public, did I come to a realization of what a colossal task the A. M. A. is constantly performing.

There is one little bill that in future I will always meet promptly and cheerfully, and that is my A. M. A., and fellowship dues. I will at least give our great A. M. A. this small support.

I certainly got a great inspiration from meeting with and seeing the big men of our profession who so unselfishly give themselves to the betterment of their fellow practitioner and the public in general. It is encouraging and enlightening to know that in the mad race for selfish gain, that there is a great organization in the good old U. S. A. which stands guard over the health of the nation and constantly guarantees that the latest development and discoveries of science will be gratuitously laid at their door. It is a good omen, and we physicians should be proud of our part in the plans and activities of this great organization.

I am sure that every County Secretary who attended will be a better County Secretary in every way. Personally, I am going to make a strenuous effort to secure a 100 per cent support of all the regular ethical practitioners in my counties. We have a few physicians in our territory who are not members of our County Medical Society, but who are eligible to join, and believe me, I am going to work on those birds 100 per cent. When a state licenses a man to practice medicine, it seems to me that as little as he can do, would be to support organized medicine, by belonging to his County, State and National Society.

Deeply appreciating the opportunity to attend the recent conference, I am

Yours very truly,
T. P. Wickliffe, Secretary.

F. C. Warnshuis, Secretary of the Michigan State Medical Society:

I beg to acknowledge your kind and thoughtful reference to the recent tragedy in my home. The remembrance of my medical friends at this time is fully appreciated.

Sincerely yours,
C. C. Clancy.

F. C. Warnshuis, Secretary of the Michigan State Medical Society:

Of the many disappointments I have encountered in passing through this vale of tears, I do

XUM

not recall one much greater than that of missing the Chicago meeting of Michigan Medical Society Secretaries. I had made reservations and was all set to go when my wife was taken sick with influenza, and on or about the time the meeting occurred, she was a very sick woman. Happily, she has weathered the storm and is gaining daily, for which I, of course, am duly thankful.

I shall be interested to know what took place at the meeting.

Yours very truly,

W. E. Ward.

F. C. Warnshuis, Secretary of the Michigan State Medical Society:

I wish at this time to convey to you my deep appreciation for the splendid time enjoyed at the recent conference held in Chicago. It was my first experience as a visitor to the headquarters of the American Medical Association and I must say that it has left a lasting impression upon me. The cordiality shown by all of the officers of the Association was splendid and their talks very illuminating and instructive. The visit through the Association building was very enlightening, as I had never realized the tremendous amount of work that is being turned out by the different departments.

I personally profited a great deal from the conference and hope to be able to transmit on to the local County Society some of the valuable suggestions received.

Again thanking you personally for your many courtesies, and all the officers of the Association who contributed to the success of the conference, I am

Yours very truly,

Russell L. Finch, Secretary,
Marquette-Alger County Medical Society.

F. C. Warnshuis, Secretary of the Michigan State Medical Society:

I have your letter of recent date asking for my opinion of the recent meeting at Chicago. I do not know of any place where more real good could be obtained from an affair of that kind than at the A. M. A. Headquarters. I am for another meeting of the same kind at the same place any time. With my very best regards I am

Yours very truly,

E. J. Evans, M. D.

F. C. Warnshuis, Secretary of the Michigan State Medical Society:

I enjoyed immensely the recent annual meeting of the County Secretaries in Chicago.

I am sure that I gained more information about the functions and activities of the American Medical Association in one short day than could be gained otherwise in ten years.

The spirit that prevailed makes one look forward to our next annual conference with added enthusiasm.

Yours very truly,

R. B. Fast, Secretary.

F. C. Warnshuis, Secretary of the Michigan State Medical Society:

Your letter of January 18th at hand regarding impressions and reactions of the recent conference held at Chicago.

I enjoyed as well as profited immensely by the conference. The ideas presented by the various speakers regarding the duties of the County Societies were very instructive. The constructive criticism brought out many good points.

I was astonished at the quantity and quality of work that is carried on at A. M. A. headquarters, and I do not believe it is fully appreciated by the medical profession.

The courtesies extended by the personnel at the A. M. A. headquarters was greatly appreciated.

Very truly yours,

Geo. F. Swanson, M. D.

F. C. Warnshuis, Secretary of the Michigan State Medical Society:

I wish to express my appreciation of your efforts in bringing about the Conference of Secretaries of the County Medical Societies of the state. It was a most interesting and instructive session, and my only regret is that I was unable to get there in time for the first day's program.

While I had heard much of the men in charge of the affairs of the American Medical Association, and of their equipment, I did not appreciate as I do now, the remarkably cordial and efficient personnel or the completeness of their plant. With such a remarkable organization anxious to be of service, I for one feel that I have neglected numerous opportunities for assistance in the past, and plan to know the A. M. A. headquarters better in the future.

The program Thursday morning was so fine that I regretted more than before that I missed the first day.

It would be superfluous for me to attempt to comment on that program Thursday morning. it was all so fine, and certainly demonstrated that they have the right men in the right places at headquarters.

The tour of the building was instructive. Indeed, I went back to the departments I wished to investigate further and believe I was the last Secretary to leave.

Should I still be eligible when you have another such conference, you may be assured that I will be there if possible.

Fraternally yours,

C. R. Elwood, M. D.

F. C. Warnshuis, Secretary of the Michigan State Medical Society:

The conference of the Michigan Secretaries of County Medical Societies was a pleasant and profitable occasion for me.

The dinner on January 16 impressed me with the cordiality of the state and national officers and their interest in our problems. I wish that Dr. Harris could have gone on further with his discussion of economics for the doctor and the cost of medical care. We doctors are too often the victims of misguided philanthropy. Dr. West's reminder of the doctor's obligation to deliver adequate scientific service was also to the point.

The visit to headquarters impressed me with the magnitude of the A. M. A., its activities, and the high quality of its work. I am more than ever proud of my connection with the A. M. A.

Meeting the heads of departments and seeing where and how they work, showed me what the Society offered to every doctor and also to the general public. I am sure that I shall in the future make much greater use of these services and also tell my patients about the information and help that is available to them.

Yours very truly,

Florence Ames, M. D.

COUNTY SOCIETY ACTIVITY

Revealing Achievements and Recording Service

EDITOR: Frederick C. Warnshuis, M. D.
Secretary Michigan State Medical Society

MINUTES OF THE EXECUTIVE COMMITTEE MEETING

The Executive Committee of the Council held its February monthly meeting in the Pantlind hotel, Grand Rapids, on February 4, 1929, at 6 p. m.

Present: R. C. Stone, Chairman; J. D. Bruce, B. R. Corbus, Geo. L. Le Fevre, L. J. Hirschman, President; F. C. Warnshuis, Secretary; Guy L. Kiefer, Chairman of the Legislative Commission.

1. Dr. Kiefer made an extended report upon the legislative situation. Same was approved and the requests of the Chairman concurred in.

2. The Secretary presented a tentative list of requests for Post-Graduate Conferences during 1929. Upon motion of Dr. LeFevre-Bruce, the policy for 1929 was determined as follows:

> That one Conference will be held in each Councilor district in the lower peninsula, and that exceptions will be made only when requests for additional Conferences are approved by the Executive Committee. It being understood that Conferences that are to be held in Detroit and Ann Arbor shall be construed as State Conferences and not as District Conferences.

3. The request of the Upper Peninsula Councilor for Conferences in three designated localities was received and the Secretary was instructed to secure additional information before final action is taken thereon at the next monthly meeting of the Executive Committee.

4. The Secretary was instructed to reply to the communication received from the Wisconsin State Medical Society and to advise them that at the present time the suggestion extended would not be entertained.

5. President Hirschman reported upon his interview with the officers and directors of the Michigan Hospital Association relative to establishing a combined conference on Nursing Education. On motion of Dr. Bruce-Le Fevre, the President was directed to appoint a committee to meet a similar committee of the Michigan Hospital Association for a preliminary conference and outlining of policy.

6. The Secretary presented several communications alleged to have been distributed through the state by Dr. L. C. Donnelly of Detroit. The Secretary was instructed on motion of Corbus-Bruce to secure a legal opinion upon these communications.

7. The Executive Committee devoted several hours to a thorough discussion of the problem of remuneration of the State Secretary. At its conclusion no agreement having been reached, on motion of Bruce-Corbus the Chairman of the Council was requested to call a special meeting of the Council for further consideration of the subject.

The meeting adjourned at 11 p. m.

F. C. Warnshuis, Secretary.

Immune: Eventually, it seems, an individual or coterie of individuals gain the delusion that they are sufficient unto themselves and immune to the code. This was evidenced recently when the Portland, Oregon, daily newspaper came out with a full page write-up of the proposed cancer research organization, sponsored by Dr. C. H. Mayo and lauding the honor conferred on Dr. Coffey in being appointed on the advisory board. Extra size photos of Coffey and Mayo headed this full page display. We feel certain that the copy did not come from a reporter's typewriter and the editor did not contribute gratuitously the space used. We are wondering if the local county society is so dormant that it does not know how to prefer charges. Recently we heard a distinguished authority state that there were about 100 men in this country whose usefulness in the medical profession had passed and that something should be done to "muzzle" them. If someone brings out the muzzle there are quite a few ready to help to adjust it. The Portland profession might well start preparing the muzzle—they now have a basis.

The Department of Post-Graduate Medicine

of

The University of Michigan

In Affiliation With

THE MICHIGAN STATE MEDICAL SOCIETY

Presents a preliminary announcement of a Post-Graduate Program.

Detroit, Michigan.

Beginning May 27, 1929—Four-week intensive courses.

Internal Medicine
General Surgery
Modern Laboratory Methods
Surgical Anatomy

In conjunction with The Alumni Association
of the Detroit College of Medicine and Surgery.
The Second Annual Post-Graduate Clinic,
June 17 and 18.

UNIVERSITY HOSPITAL
Ann Arbor, Michigan

Beginning April first and continuing through May and June, two-week intensive courses will be given in the technic of the Kahn test. Personal advanced courses of longer periods in Serology. Courses in general medical laboratory methods. (Under the direction of Dr. R. L. Kahn, Director of University Hospital Medical Laboratories).

ROENTGENOLOGY

March 15th

Six courses are offered. With the exception of Course 1, only those with previous X-ray experience will be admitted.

Course 1—4 weeks. The study of normal X-ray anatomy.
Course 2—8 weeks. Acute and chronic bone and joint pathology.
Course 3—8 weeks. Acute and chronic pulmonary and cardiac conditions.
Course 4—8 weeks. The gastro-intestinal tract.
Course 5—8 weeks. Superficial and high voltage therapy.
Course 6—4 weeks. Ultra-violet radiation and diathermy.

(Under the direction of Dr. P. M. Hickey, Director of Roentgenological Laboratories).

A detailed description of the above courses, together with the program of Post-Graduate Conferences, will be published in the April and May numbers of this Journal. For further information apply to the Director of Post-Graduate Medicine, University Hospital, Ann Arbor, Michigan.

GOOD WORK—BAY COUNTY

On February 11, Bay County Medical Society issued Volume 1, No. 1, of a 28-page and attractively designed covered bulletin. Its size is 8x11. Novel in make-up and a goodly number of advertisements. It will be issued twice a month. Thus in one big jump the Bay County Bulletin leads off in style, contents and novelness and passing the bulletins of other Michigan County Medical Societies, it assumes first place. Our congratulations and applause are extended to the officers and members of the Bay County Medical Society for this forward step of activity.

ADVERTISEMENTS

Your Journal is possible because of revenue received from advertisements. One of our chief difficulties is that advertisers claim that our Journal does not bring replies, even when they use coupons and offer samples free. They claim they receive a greater number of replies from advertisements run in other state journals than they do from Michigan. Are our members failing to patronize our advertisers. If so, there will be but one end result—a decline in advertising income.

The request is made anew to patronize our advertisers. Send for their samples and their literature, or just write and tell them you have read their ad. It is vital to your Journal's financial welfare.

PRESCRIBING MORPHINE

Regretfully do we read each month of some doctor being arrested for violation of the federal narcotic law. Sometimes the arrest is for wilful violation, again it is brought about by ignorance. To the latter end we submit the following rulings for information and guidance.

Revoking Pro-Mimeograph, Pro. No. 316, Dated May 21, 1923, and Outlining Treatment of Narcotic-Drug Addiction Permissible Under the Harrison Narcotic Law.

To Narcotic Agents in Charge and Others Concerned:

Pro-Mimeagraph, Pro. No. 316, dated May 21, 1923, is hereby revoked, and the following outline of procedure to be followed in prescribing and dispensing narcotic drugs is issued for the guidance of narcotic agents in charge, and others concerned. This pamphlet is intended to be advisory only and to anticipate and answer questions arising in the minds of practitioners in regard to the law and regulations governing the prescribing and dispensing of narcotic drugs as interpreted by the courts.

The regulations governing this subject are contained in article 85, regulations 5, and read as follows:

Purpose of issue.—A prescription, in order to be effective in legalizing the possession of unstamped narcotic drugs and eliminating the necessity for use of order forms, must be issued for legitimate medical purposes. An order purporting to be a prescription issued to an addict or habitual user of narcotics, not in the course of professional treatment, but for the purpose of providing the user with narcotics sufficient to keep him comfortable by maintaining his customary use, is not a prescription within the meaning and intent of the act; and the persons filling and receiving drugs under such an order, as well as the person issuing it, may be regarded as guilty of violation of the law.

Explanations.—Exceptions to this rule may be properly recognized in the treatment of incurable disease, such as cancer, advanced tuberculosis, and other diseases well recognized as coming within this class, where the physician directly in charge of a bona fide patient suffering from such disease prescribes for such patient, in the course of his professional practice and strictly for legitimate medical purpose, and in so prescribing, indorses upon the prescription that the drug is dispensed in the treatment of an incurable disease; or if he prefers he may indorse upon the prescription "Exception (1), article 85"; (2) a physician may prescribe for an aged and infirm addict whose collapse would result from the withdrawal of the drug, provided he indorses upon the prescription that the patient is aged and infirm, giving age; or if he prefers he may indorse upon the prescription "Exception (2), article 85."

GENERAL

It is impossible to state an inflexible rule which will cover all cases, and this outline must, therefore, be general in nature and subject to modification through further interpretation of the law by the courts. The bureau is not charged with the duty of laying down any fixed rule as to the furnishing of drugs or the frequency of the prescriptions in any particular case. This responsility rests upon the physician in charge of the case. While the primary responsibility rests upon the physician in charge, a corresponding liability also rests upon the druggist who knowingly fills an improper prescription or order whereby an addict is supplied with narcotics merely for the purpose of satisfying his addiction. Caution should be exercised to avoid being imposed upon by unscrupulous persons, and too much credence should not be given to the unsupported statements of the addict himself, because the confirmed addict will go far beyond the truth in an attempt to secure an ample supply of narcotic drugs with which to satisfy his cravings.

The good faith of the physician and the bona fides of his treatment in a given case will be established by the facts and circumstances of the case and the consensus of medical opinion with regard thereto, based on the experience of the medical profession in cases of similar nature. Physicians will be charged with violation of the law if, through carelessness or lack of sufficient personal attention, the patient secures more narcotic drugs than are necessary for medical treatment and devotes part of his supply to satisfy addiction.

USE OF NARCOTICS IN THE TREATMENT OF DISEASE WITHOUT REFERENCE TO THE QUESTION OF ADDICTION

Without reference to the question of addiction, a physician acting in accordance with proper medical practice may prescribe or dispense narcotics

for the relief of acute pain or for any acute condition, such as influenza, pneumonia, renal calculi, broken limbs, etc.

USE OF NARCOTICS IN THE TREATMENT OF INCURABLE DISEASE

A reputable physician directly in charge of bona fide patients suffering from diseases known to be incurable, such as cancer, advanced tuberculosis, and other diseases well recognized as coming within this class, may in the course of his professional practice, and strictly for legitimate medical purposes, dispense or prescribe narcotic drugs for such diseases, provided the patients are personally attended by the physician who regulates the dosage, and prescribes no quantity greater than that ordinarily recognized by members of his profession to be sufficient for the proper treatment of the given case. The danger of supplying persons suffering from incurable diseases with a supply of narcotics must be borne in mind, because such persons may use the narcotics wrongfully, either by taking excessive quantities or by disposing of a portion of the drugs in their possession to other addicts or persons not lawfully entitled thereto. The physician should indorse upon the prescription that the drug is dispensed in the treatment of an incurable disease, or if he prefers he may indorse upon the prescription "Exception (1), article 85."

USE OF NARCOTICS IN THE TREATMENT OF ADDICTION ONLY

Mere addiction alone is not recognized as an incurable disease. It seems necessary, however, to divide the addicts not suffering from an incurable disease into two classes: (*a*) Those suffering from senility or the infirmities attendant upon old age, who are confirmed addicts of years standing, and who, in the opinion of a reputable physician in charge, require a minimum amount of narcotics in order to sustain life; and (*b*) those whose addiction is not complicated by incurable disease or by the infirmities attendant upon old age.

(*a*) *Aged and infirm addict.*—Addicts suffering from senility or the infirmities attendant upon old age and who are confirmed addicts of years standing may be, for the purpose of enforcing the law, treated as addicts suffering from incurable diseases. In such cases, where narcotic drugs are necessary in order to sustain life, a reputable physician may prescribe or dispense the minimum amount necessary to meet the absolute needs of the patient. In this class of cases the physician issuing the prescription should make a statement on the prescription to the effect that the patient is aged and infirm, giving age, and certifying that the drug is necessary to sustain life, or, if he prefers, he may indorse upon the prescription "Exception (2), article 85."

(*b*) *The ordinary addict.*—It is well established that the ordinary case of addiction yields to proper treatment, and that addicts will remain permanently cured when drug taking is stopped and they are otherwise physically restored to health and strengthened in will power. A physician may, in the course of his professional practice only and in accordance with the consensus of medical opinion, afford temporary relief to an ordinary addict whose condition demands immediate attention by prescribing or dispensing the minimum quantity necessary to prevent his collapse and enable him to reach a hospital, institution, or place where treatment under proper restraint is to be undertaken. Such cases should be cautiously handled and the physician in charge should satisfy himself that the narcotics thus furnished are not to be diverted for an unlawful purpose, that steps looking toward such treatment actually have been or promptly will be taken, and that the conditions are such (usually indicated by the presence of a responsible accompanying nurse or attendant) that the addict can not augment his supply of drug by securing additional amounts from another source. This bureau has never sanctioned or approved the so-called reductive ambulatory treatment of addiction for the reason that where the addict controls the dosage he will not be benefited or cured. Medical authorities agree that the treatment of addiction, with a view to effecting a cure, which makes no provision for confinement while the drug is being withdrawn, is a failure, except in a relatively small number of cases where the addict is possessed of a much greater degree of will power than that of the ordinary addict.

Special advice to cover cases not falling within these instructions will, upon request, be furnished by this office.

J. M. DORAN,
Commissioner.

NOTES OF THE MONTH

January witnessed the compilation of annual reports, the holding of the Council meeting and the Conference of County Secretaries. The report of that Conference was published in detail in the February Journal. We urge that if you did not read it, that you do so now. Letters from Secretaries attending were published in the February issue with an additional number in this issue.

February brought in a goodly number of dues and their receipt necessitates five separate entries and mailing of certificates.

An executive committee meeting was held on February 4.

Three violators of our medical practice laws were arrested upon evidence submitted and two other violators are being investigated.

Twice a week a conference is held with our legislative representative and new bills are carefully reviewed.

There was a gross state-wide failure to secure the desired number of signers to petitions. Yes, it's very easy to clamor about protecting, securing or defeating legislation, but when you expect the other fellow to do your mite—well, it just can't be done. Legislation in Lansing is not influenced that way. But more on this subject at a later date.

Just now our Society is pledged to fourteen (14) distinct activities that are of intimate concern to every doctor. These activities are not self-propelling and do not "just grow". A majority of members have but little conception of the time

requisite to supervise details—neither do they appreciate what is being done for each member. We often wonder why such dis-interestedness.

Three suits against members were settled by the medical-legal committee during the month in which payments of $2,325, $3,000 and $3,250 were made by the insurance companies. All because of failure to use the X-ray. Attorney fees were assumed by the medico-legal committee. These cases are ample warning.

Legislative Commission meeting in Lansing on the 13th. Lansing creates scenes that make one wonder "Why a legislature?" Many fool doings may be observed.

A. M. A. trustees meeting in Chicago on the 21st and 22nd.

Requests for 17 Post-Graduate conferences for 1929 have been received and schedule arranged.

There are eight days of the month remaining at the time of going to press—and they will be productive of plenty work.

MIDWIVES AND OBSTETRICS

The following from the Wayne County Bulletin is of great interest:

STATE OF MICHIGAN

Attorney General's Department, Lansing
February 1, 1929.

Mr. E. E. Valentini,
Executive Secretary,
Wayne County Medical Society,
1124 Maccabees Building,
Detroit, Michigan.

My dear Sir:

You have asked my opinion as to the legal status of midwives and midwifery in Michigan, with special reference to the definition of—"practice of medicine," as defined in Section 6832, Compiled Laws of 1915.

None of the statutes relating to midwives or midwifery define the term, nor has the legislature attempted to limit their field of practice or in any other manner regulate the same unless they may be said to be physicians as defined by the section above referred to.

The provisions of Section 5038, Compiled Laws of 1915, require every—"physician, nurse or midwife who shall assist and be in charge of the birth of any infant, to treat the eyes of the infant with a prophylaxis * * *," etc.

Act. No. 343, Public Acts of 1925, makes it the duty of every—"physician, midwife or person acting as midwife," in attendance at the birth of an infant, to file a birth certificate.

A careful search discloses but one case bearing upon the question as to whether midwives are physicians within the meaning of the medical practice acts. This case is Commonwealth vs. Porn, 196 Massachusetts, 326, 82 N. E. 31. In this case the defendant was charged with practicing medicine and holding herself out as a practitioner of medicine. She held herself out as a midwife and practiced midwifery, but did not claim to be a general practitioner of medicine nor was she lawfully authorized to practice medicine as provided by the Massachusetts laws. She used several prescriptions or formulas in treating her patients, which contained directions for their application, and practiced obstetrics for compensation. She was held to have violated the medical practice act, and was convicted upon these charges. The court said:

"Both medical and popular lexicographers define 'midwife' as a female obstetrics. Rev. Laws, Chap. 76, Par. 7, mentions obstetrics as one of the subjects of examination for the purpose of testing the applicant's fitness to 'practice medicine.' This goes far toward showing that obstetrics is a branch of the practice of medicine. It requires no discussion to demonstrate then when, in addition to ordinary assistance in the normal cases of childbirth, there is the occasional use of obstetrical instruments, and a habit of prescribing for the conditions described in the printed formulas which the defendant carried, such a course of conduct constitutes a practice of medicine in one of its branches. Although childbirth is not a disease but a normal function of women, yet the practice of medicine does not appertain exclusively to disease and obstetrics as matter of common knowledge has long been treated as a highly important branch of the science of medicine. * * *

"The defendant contends that the statute as thus construed is unconstitutional. Its validity cannot be questioned on this ground. The maintenance of a high standard of professional qualifications for physicians is of vital concern to the public health, and reasonable regulations to this end do not contravene any provision of the state or federal constitution. * * *"

While the supreme court of this state has never been called upon to pass upon this question, it is my opinion that the reasoning applied by the Massachusetts court in the case above referred to is applicable to this question, under the provisions of the Michigan statutes.

It, therefore, follows that where a midwife holds herself out as a midwife and practices the profession for compensation, that she is a physician within the meaning of Section 6732, Compiled Laws of 1915, and must be licensed as such.

Yours very truly,
(Signed) WILBER M. BRUCKER,
Attorney General.

CIVIC AND INDUSTRIAL RELATIONS

A committee is and does what its chairman inspires. The following report indicates that our Committee on Civic and Industrial Relations is well inspired. It is just such work that enhances all our interests.

Committee On Civic and Industrial Relations

The Civic and Industrial Relations Committee of the Michigan State Medical Society held a meeting at the Palmer House in Chicago on January 16th with Doctors L. A. Farnham, C. D. Munro and H. S. Collisi present. Even though the attendance was small, much discussion took place on a number of subjects of importance and

the meeting lasted from 12:15 to 5:45 p. m. The committee discussed the following:

1. The Relationship of Industrial Medicine to Industrial Surgery in Factory Clinics.

(a) The trend of industrial activities has been to broaden the field of service to include not only medical attendance for injuries received in industry, but also to include medical attendance of employees (and their families) for diseases not incident to their occupation.

(b) Employers of the small factories engage trained nurses to have charge of the first-aid departments. There is a tendency for these nurses to render surgical attendance and medical advice, even to dispensing medicine, to employes without the knowledge or advice of a physician. This is in violation of the Medical Practice Act. A physician should be appointed medical director of such first-aid departments, taking the responsibility with the nurse acting under his direction. Larger industrial plants have full time physicians which, of course, solves the problem in those institutions.

The committee suggests that each County Society take up this problem in a near future meeting, either regular or special, and discuss the matter. The surgeons doing industrial work in each County Society are in a good position to add much information at the time the discussion takes place. The committee desires to send a questionnaire to each County Society, through the State Secretary's office, requesting a free discussion of this subject and a reply to be returned so that the committee may have a foundation from which to tabulate the information received.

It was further decided to make this question of the relationship of industrial medicine to industrial surgery "the major activity for the Civic and Industrial Relations Committee during the present year" because it seems to involve a situation *approaching that of State Medicine.*

2. Abatement of imposition upon physicians by life insurance companies in furnishing statements of present physical condition of applicants for insurance.

Life insurance companies are more and more prone to request in writing from physicians a statement concerning a proposed applicant who is or has been a former patient of the physician. The physician has rendered previous medical or surgical attendance and is asked to state the date, diagnosis, description of operation and physical examination of the applicant in question, and to further state his knowledge of the applicant's present physical condition. The physician may be, but usually is not, a regularly appointed examiner for the company from whom the request is made. No fee is paid the physician for this information, which is virtually a statement of a medical opinion regarding the applicant's physical condition. The committee believes that at least a fee equivalent to office consultations of either $2.00 or $3.00 should be allowed the physician for these statements.

The committee is of the opinion that this question should be taken up with each life insurance company underwriting in the state of Michigan and that their reaction be obtained to the proposal that a legitimate fee be paid to the physician when rendering such reports.

3. Revision of form of health and accident insurance companies' report blanks.

Most health and accident insurance companies have forms of preliminary and final examination blanks, containing many irrelevant questions regarding the claimant and his physical condition, for which the physician receives no fee for filling out. It is admitted that every physician is required at times to fill out these blanks for his own patients and friends and does not refuse to do so because of this fact. In addition to requesting the diagnosis or nature of injury, the length of total and also partial disability, the claimant's present condition and the date on which disability should cease, it is also necessary to answer a number of pertinent questions regarding the claimant's temperature, pulse, respiration, condition of heart and lungs and even occasionally the urine analysis, for all of which no fee is paid unless collected from the claimant himself.

Is it not possible to have these forms revised to exclude all questions except those necessary to determine the length of disability?

4. *Study of free clinic situation.*

Throughout our state in the various cities there are many clinics doing charity, such as infant feeding, prenatal, orthopedic, tuberculosis, pre-school, out-patient of hospitals and various others. A number of these clinics, particularly those interested in child welfare and infant feeding, are allowing themselves to drift so that service is rendered to all who request it, including those well able to pay for the service given. Instances are reported in which patients drive up to such clinics in

their limousines and have even been attended there by their own family physicians who have agreed to serve thereon.

Just what should our attitude be toward the policies of such clinics? Should we ask the county societies to make a study of the local situations and report to us?

5. *Irresponsibility and negligence of automobile drivers in not paying for medical services to hospitals and physicians when either injured themselves, or having injured someone else.*

Every hospital and physician are caring for certain individuals who have been injured in an automobile accident. The injuries may be serious and extend over long periods of time and the expense involved is a considerable figure. The person or persons responsible for the accident in which injuries have occurred may not carry liability insurance upon his automobile and when the case has been settled it is found that the owner of the car not only does not carry insurance, but he is also irresponsible for payment of the expense.

Should not the medical profession of this state offer to the public, statistics and information to bring about suitable reaction that will cause ultimately the passing of compulsory automobile insurance laws? The information could be obtained quite readily from the hospital librarians and the individual physician could contribute much valuable data on the subject. Massachusetts has a compulsory insurance law which has been subject to much criticism by automobile manufacturers and dealers since its enactment, but it has done much to regulate the activities of the drivers. It is believed that compulsory insurance laws for automobile drivers will eventually lead to physical examinations of drivers before a license is issued. The majority of automobile accidents are found to occur with individuals who have either some physical or mental impairment.

6. *Revision of form of report blanks for compensation insurance companies.*

Compensation insurance companies have a variety of blanks to be filled out in the reporting of industrial accidents. This may be necessary because the company probably is transacting business in various states and must use blanks conforming generally to the laws of the different states.

It is believed that the Michigan Compensation Law is so written that industrial insurance company blanks may be reduced and many unimportant questions eliminated.

This letter has been written so that each member of the committee who was not present at the Chicago meeting may have knowledge of the discussion of the various questions as above elaborated.

In order to obtain your reaction to each, will you kindly note under each topic in the space provided any remarks and send to me in the self-addressed envelope by return mail? It is the intention of the committee to devote our activities to the first, second and third subjects. However, we would like to secure an expression from you on the remaining three also.

I believe that the Civic and Industrial Relations Committee is the most important one of the Michigan State Medical Society and am very anxious to do some constructive work this year and will appreciate your help.

On account of the inability to hold frequent meetings of the committee, the Chairman wishes it understood that he is willing to do as much of the work as is possible by correspondence and will take the initiative to so proceed if it is agreeable to the other members. We will have another meeting possibly during the month of June.

Very truly yours,

Harrison S. Collisi,
Chairman, Civic and Industrial Relations Committee.

X-RAY WARNING

During February two suits of malpractice were settled. In one a payment of $2,325 was paid in settlement for a doctor who failed to secure an X-Ray during the treatment of a fracture and the poor end result was blamed to that negligence. In the second case $3,250 was paid in settlement for the doctor who treated a fractured hip without an X-Ray.

In the light of these two cases in one month, our attorney urges that a warning be sounded to our members. *Our attorney advises that the doctor insist on an X-Ray in every fracture or suspected fracture. If the patient refuses then decline to treat the case.*

One becomes grossly liable if he fails to heed this advice and is headed for legal trouble and an adverse verdict. The courts have gone so far as to rule that in view of present day transportation facilities one is not excusable because in your town you do not have an X-Ray. The

burden is upon you to secure an X-Ray of all fractures.

The warning is repeated: Decline to treat a fracture or suspected fracture if your patient refuses to have an X-Ray. Withdraw entirely from the case. Unless a doctor follows this advice he may confidently expect a damage suit in his fracture cases wherein the X-Ray was not used.

LEGISLATION

At the time of going to press (Feb. 23rd), the two bills sponsored by our Legislative Commission were no longer being opposed by the chiropractors. An understanding has been accomplished. The chiropractors have accepted the requirements of the Professional Qualifications Act and include it in their law. Objection is being registered at the last moment by the osteopaths. Steps are being taken to oppose their efforts. It is anticipated that final action will be recorded during March.

The following bills, of interest to doctors, have been introduced and are receiving the attention of the Legislative Committee:

In re: Senate Bill No. 158

This is a bill to amend Act No. 306 of the Public Acts of 1927 entitled "An Act to provide for County Health Departments"; this bill adds a new section to that act which provides that when approved by the State Health Commissioner, the State Auditor General shall refund to the county maintaining a County Health Department, not to exceed 25 per cent of the cost of maintenance of such department, but that such refund shall not exceed $3,000 per annum for any such county or health district.

This is a bill introduced by Senator Howell, at the request of Dr. Guy L. Kiefer, the Commissioner of the Department of Health.

In re: House Bill No. 54

This is a bill to amend Sections 10 and 23 of Act No. 285 of Public Acts of 1919 being Sections 5331 and 5344 of the Compiled Laws of 1915 which is "An Act to Provide for the creation of a Department of Labor, etc."

Section 10 deals with the employment of children under 15 years of age and this amendment provides "That the occupation in which such persons are employed shall be approved by the Department of Labor and Industry, as not being injurious to health or morals or unduly hazardous."

The amendment to Section 23 is in regard to increasing the power of factory inspectors to order installation of proper and adequate ventilating facilities, etc., necessary for the preservation of the health or safety of the persons therein employed.

In re: House Bill No. 55

This is a bill to amend Section 4, Part 2 of Act No. 10 of the Public Acts of the Frst Extra Session of 1912 being Section 5434 of the Compiled Laws of 1915.

This amendment changes the period after the injury during which the employer shall furnish or cause to be furnished, reasonable medical, surgical and hospital services and medicines to the injured employe for a period of 180 days instead of 90 days as was previously provided.

In re: House Bill No. 26

This is a bill to amend Act No. 95 of the Public Acts of 1895 being Section 5142 of the Compiled Laws of 1915, which is "An Act to prevent the introduction of a dangerous communicable disease in any township, city or village in Michigan, except under specified regulations."

This present amendment provides that the county may construct and maintain hospitals, etc., for the treatment of persons suffering from contagious or infectious diseases in any township in said county and may transport persons and property to and from such hospitals, etc., by and under the supervision of the regularly constituted County Health Department or County Health Officer or other public authority having control thereof without the consent or special permission of the Board of Health or the health officer of any town within said county.

While in Lansing on February 19, 1929, the writer took this bill up with Dr. Kiefer and he stated that so far as his department was concerned, it was a good bill and while his department was not directly behind it, nevertheless, they were in favor of it.

In re: House Bill No. 80

This is a bill to amend Sections 2 and 3 A of Act No. 28 of the Public Acts of 1887 being Sections 11377 of the Compiled Laws of 1925 being "An Act for the requiring of a civil license in order to marry."

This bill provides blank forms for a marriage license and certificate and physician's certificate and all proper books of registration ruled for the items contained in said forms, shall be prepared by the Secretary of State and shall be furnished by him to the County Clerks of the various counties of the state in quantities needed, and in addition inserts throughout Section 2, the words "physician's certificate" wherever the same is needed.

The amendment to Section 3 A is: "No license to marry shall be filed or issued unless there shall be filed with the application for such license, a physician's certificate or certificates signed by a regularly licensed and practicing physician, certifying that such physician has made a mental and physical examination of the parties to such proposed marriage and that he finds such persons free from any mental or physical disease which would render it improper for such persons or either of them to marry."

It further provides that any physician who will make a false certificate or statement shall be deemed guilty of a misdemeanor and shall be punished by a fine of not more than $200 or imprisonment in the county jail for not more than one year or both such fine and imprisonment in the discretion of the Court.

Another bill has been introduced that would place the burden of proof upon any defendent in a mal-practice suit. This bill is pernicious and steps are being taken to protest its enactment.

In the "Milk Bill" amendments were introduced whereby the physical examinations of employes are to be made by physicians in place of health officers.

The foregoing reflects in part the legislative situation on February 23rd.

Help! Help!: That's the cry a certain person, who edits a column in one of our dailies, uses quite frequently. We are borrowing the cry for the moment. The February Journal contained 160 pages. The largest issue yet published—a ton and a half of paper was used. This paper contained print impressions of some extremely interesting facts and information. At the present writing not a comment or a single response was evoked by that issue. And that's that.

NEWAYGO COUNTY

The annual meeting of the Newaygo County Medical Society, was held at the Kimbark Inn, Fremont, Mich. After luncheon the meeting was called to order by the president, Dr. H. R. Moore.

After general discussion the Society proceeded to the election of officers for the ensuing year.

President, Dr. D. Lettinga, Grant; vice-president, Dr. A. C. Tompsett, Hesperia; secretary-treasurer, Dr. W. H. Barnum, Fremont; commissioner of medical defense, Dr. N. D. Haas, Fremont; delegate to M. S. M. S., Dr. P. Drummond, Grant; alternate to M. S. M. S., Dr. H. R. Moore, Newaygo.

Members present, seven.

Dr. M. H. Mothersill was voted a member of the Society.

No further business being at hand the meeting adjourned.

W. H. Barnum, M. D., Secretary.

LENAWEE COUNTY

The annual meeting of the Lenawee County Medical Society was held at Dobbin's Tea Room in Adrian on the evening of January 21. Following the dinner which was much appreciated by everyone after driving over the icy roads, the following officers were elected for the ensuing year.

President, Dr. R. G. B. Marsh, Tecumseh.

Vice-president, Dr. Allan H. Veazey, Hudson.

Secretary-treasurer, Dr. C. H. Westgate, Morenci.

On retiring from the chair of secretary, Dr. Marsh gave a very interesting report of the Secretary's Conference at Chicago. Many of those present were much surprised to know of the extent of the work carried on by the A. M. A. Dr. Marsh has been one of the best Secretaries which the Society has ever had, and he received only the honor which was his due when he was elected to the President's chair.

It was unanimously voted to elect Dr. Eccles of Blissfield to honorary membership in the Society. Dr. Eccles has been one of the most active and faithful members of the County Society since its organization, and is beloved by every physician who has ever come into contact with him. He has been in active practice in this country longer than any other physician now living, though not the oldest physician in the county still in practice. He has always been like a father to the younger members of the profession, and his colleagues take great pleasure in thus giving recognition to his sterling character and loyal friendship.

A word of appreciation is due Dr. H. H. Hammel of Tecumseh for the successful way in which he has presided over the meetings of the Society for the last three years as President. All the incoming officers feel that we will be obliged to use our fullest resources to equal the record set by Dr. Hammel as President and Dr. Marsh as Secretary during their three years incumbency of their offices.

C. H. Westgate, M. D., Secretary.

CALHOUN COUNTY

The January meeting was held at the Kellogg Inn on Tuesday, January 8, 1929. At 6:30 dinner preceded the meeting and 38 members enjoyed a social repast. At 7:45 the President, Dr. R. V. Gallagher, called the meeting to order. The Secretary's report, as printed in the Bulletin, Vol. XII., Number I, was adopted as printed. The following bills were read and ordered paid: Phoenix Printing company, $25.25, and Croydon and Sutherland, $10.

A communication from the American Legion requested that the Medical Society co-operate with them in the purchase of advertising space in their program in the forthcoming show to be put on in Battle Creek. On motion of Dr. Sleight, it was voted to assist them to extent of $40. Carried.

On motion of Dr. R. C. Stone, it was voted to take care of part of the expenses of the secretary in attending the coming meeting of the Michigan County Society's Secretaries, to be held at Chicago on January 16 and 17. Carried.

There being no committee reports, the president called upon Dr. Stone to introduce the essayist of the evening, Dr. Plinn Morse, pathologist to the Harper Hospital, Detroit. Dr. Morse stated that the family doctor is the only person to properly sell the idea of the autopsy. While it does not directly benefit the patient, and certainly is no pleasure to the doctor, yet more and more people are demanding post mortem examinations in order to satisfy every possible question concerning the cause or causes of death. Certainly the development of an autopsy service by the hospitals, performed by a trained pathologist, serves as a check upon slipshod or careless diagnosis. The time will soon come when the public generally will demand post mortem examinations.

The following types of cases taken from the last five autopsies done by him were discussed:

Case 1—Boy 9, diabetes incipidus.

Case 2—Man, gastric hemorrhage due to hemorrhoidal veins of esophagus.

Case 3—Man 56, substernal goiter, secondary to adrenal adenoma.

Case 4—Man, 56, carcinoma of liver, secondary to cauliflower cancer of cardia.

Case 5—Man 60, metastatic cancer of prostate.

The paper was discussed by Doctors Harris, Eggleston, Rosenfeld, Stone, Gubbins, Mortensen, Van Camp, Kingsley, Haughey and Zelinsky.

Meeting adjourned.

Members present, 50

Harry B. Knapp, Secretary.

MONROE COUNTY

Monroe County Medical Society has had some interesting meetings this winter.

On November 15, Dr. G. Van Amber Brown, of Detroit, gave a talk on "Pelvic Inflammatory Diseases." It was illustrated by lantern slides. The

discussion of the pathology of the conditions was especially appreciated by the Society.

Dr. F. L. Perlsin, of Detroit, spoke December 20, 1928, on "General Considerations in the Treatment of Diabetes Mellitus."

January 24, 1929, Dr. John R. Davis, Toledo, (125—15th street) gave a talk on "New Work in Fractures." Dr. Davis attended the clinic of Dr. Laurenz Bohler, Vienna, in 1928. He showed motion pictures of the care of fractures there. He also demonstrated a new type of wire splint devised there. All reducing and setting of fractures there is done under *local* anaesthetic, *without pain*. Casts are not padded, permitting better traction. Exercise is begun immediately, with great reduction in the period of disability. Dr. Davis has applied these methods himself and has had splendid results. This discussion was tremendously interesting. May I suggest that this talk and demonstration would be splendid to offer to the State Society at its next meeting?

Florence Ames, M. D., Secretary.

MACOMB COUNTY

The meeting was called to order by the President, Dr. A. B. Bower.

The membership committee reported favorably on the applications of Dr. R. E. Hawley of Ste. Claire Shores and Dr. Paul Gageky of Warren. Both these applicants were then elected to membership.

Dr. J. P. Isaminger of the Health Extension Division of Ann Arbor. Spoke briefly on the plan of "The Health Lecture Service." A series of five lectures on the "Health Heroes" to be given by local doctors to the local high school assemblies. Dr. G. F. Moore was appointed as a committee to act on this matter.

The Secretary was instructed to write letters of sympathy to Mrs. E. G. Folsom, and to Mrs. J. G. White expressing the regret of the Society for their respective bereavements, (Dr. E. G. Folsom and Dr. J. G. White).

Dr. Edgar Poos of Highland Park, gave an illustrated talk on "Infections of the Head." Dr. J. M. Croman, Sr., Dr. J. M. Croman, Jr., and Dr. C. F. Moore took part in the discussion that followed.

The meeting adjourned at 2:00 p. m.

J. W. Scher, M. D. Secretary.

ALPENA COUNTY

Report of meetings:—

Meeting of December 20th, 1927.

This was our regular annual business meeting and the time was devoted to, the election of officers for the ensuing year, a review of the activities of the Society for the past year and planning a program for the coming year. A committee was appointed, consisting of Doctors Belland Jackson, to draw up resolutions upon the death of our Secretary and co-worker Dr. C. M. Williams, who's recent sudden death deprived us of one of our most active members.

Following the business session a social hour was enjoyed during which, the economic and business side of medicine was freely discussed by all present. Officers for 1929 were elected as follows.

President, Dr. E. L. Foley, Alpena.
Vice-President, Dr. J. S. Jackson, Alpena.
Secretary-Treasurer, Dr. W. B. Newton, Alpena.
Delegate, Dr. S. T. Bell, Alpena.
Alternate, Dr. D. A. Cameron, Alpena.
Legal Representative, Dr. E. L. Foley, Alpena.

Meeting of January 24th, 1929.

The first regular meeting of the New Year was held following a dinner at The Temple Cafe. Meeting called to order by President Foley. Minutes read and approved. Committee on resolutions upon the death of Dr. Williams reported and the report adopted and copies ordered sent to Mrs. Williams and spread on the minutes. Application for membership from Dr. William E. Nesbitt was received and referred to a committee. Dr. Foley, legal representative, reported upon legislative mattrs, reporting our Senator and Representative as being favorable to our medical bills as pending in the legislature.

The scientific paper for this meeting was to have been furnished by Dr. Purdy of Long Rapids, but owing to the very severe snow storm of the previous night Dr. Purdy was unable to get into the city, necessitating a postponement of his paper to a future meeting.

Dr. Newton reported a case of acute santinine poisoning and an unusual case of mastoiditis following which Doctors O'Donnell, Foley, Cameron and Bell reported unusual cases of influenza observed during the recent epidemic.

Meeting or January 31, 1929.

About noon on the above date the Secretary chanced to learn that Dr. Don M. Griswold, deputy state commissioner of health, was in our city for the purpose of addressing the students of our County Normal and upon getting in communication with Dr. Griswold he very graciously consented to remain in the city over night and address a meeting of our Society that evening. Having met Dr. Griswold while he was at the University of Iowa and knowing of his great work in that state together with the splendid work he is doing in our own state health department, we felt that an opportunity to hear Dr. Griswold could not be passed by. We got busy by phone, both local and long distance, and as a result every local physician, who was in the city that night was present and Dr. Purdy, of Long Rapids, came 20 miles over almost impassable roads to be present. We also had as our guests, at the dinner and meeting, the three public health nurses of the city and county. Following a delightful dinner Dr. Griswold gave us a very interesting informal address which was all too brief, although he talked for more than an hour. He discussed tularemia, telling us briefly what is known about this disease, its mode of infection, symptomatology and diagnosis. He also discussed various laboratory diagnostic methods employed in the state laboratory in the diagnosis of disease and stressed the value of such aid to the practicing physician. Dr. Griswold discussed in some detail the County Health Unit plan and pointed out the great value of this plan is sparsely populated counties such as ours. Dr. Griswold closed his very fine address with a strong plea for a closer co-operation of the physicians of the state with the state department of health, pointing out that Dr. Kiefer and the persnnel of the department were endeavoring, to their utmost ability, to cooperate with the physicians of the state to the end the state department of health may render an efficient and prompt service to both the medical and lay population within the state .

We greatly enjoyed Dr. Griswold both for his charming and gracious personality and for his marvelous store of information of which he so freely gave us.

W. B. Newton, Secretary.

XUM

GRATIOT-ISABELLA-CLARE COUNTY

The January meeting of the Gratiot-Isabella-Clare County Medical Society was held in the Park House, St. Louis, Thursday, January 31. Twenty-four had dinner together after which President Du Bois introduced the speaker of the evening Dr. Guy L. Kiefer, state commissioner of health, who in turn introduced Dr. C. C. Young of the state board of health, asking him to describe the making of scarlet fever toxin, and scarlet fever anti-toxin.

After Dr. Young had explained how these two products are made Dr. Kiefer explained how to use them, both for the Dick test, for immunization, and for the therapeutic uses. All this proved very interesting, and profitable, the turnout was larger than usual, the eats were good, making a good meeting in every way.

E. M. Highfield, Secretary.

MARQUETTE-ALGER COUNTY

The January meeting of the Marquette-Alger County Medical Society was held January 22nd. at the Hotel Clifton in Marquette. The meeting was called to order following the dinner which was served at 6:30. Dr. Richard Burke, Councillor from this district, gave a report on the recent council meeting in Chicago. Dr. R. L. Finch gave a report on the recent Secretary's meeting which was held in Chicago. The annual election of officers was then held, and the following officers elected for the year 1929.

President, Dr. A. W. Hornbogen, Marquette.

Vice-President, Dr. W. A. Corcoran Ishpeming. ing.

Secretary-Treasurer, Dr. Russell L. Finch, Marquette.

Delegate to the State Medical Meeting, Dr. C. N. Bottum of Marquette.

Alternate Delegate to the State Medical Meeting, Dr. S. Lojocano, Marquette.

Delegate to present the invitation to the U. P. Medical Society to meet in Marquette County in 1930—Dr. A. K. Bennett of Marquette.

Russell L. Finch, M. D. Secretary.

GENESEE COUNTY

Report of the minutes of the Genesee County Medical Society.

President-Elect Dr. Don Knapp in the chair. Minutes of the last meeting read and approved.

Application for membership in the G. C. M. S. of Dr. Joseph Altwer and Dr. E. B. Guile read. Moved by Dr. Marshall and seconded that the vote on applications be taken. Motion carried.

Committee on ethics report by Dr. Patterson that Dr. Ard of Montrose of practicing unethical medicine. Moved and seconded by Dr. Marshall that Dr. Ard be asked to appear before the G. C. M. S. board of directors to give reasons why he should not be expelled from G. C. M. S. Motion passed.

Dr. Arthur C. Curtis of the University of Michigan gave a talk on "Simularity of Hunger and Appetite and effect of Vitamin B."

Discussion followed. Meeting adjourned.

President Benson in the chair. Minutes of the last meeting read and approved. Dr. Tupper moved that the letter from the State Secretary regarding legislative activity be referred to the legislative committee. Motion seconded and passed. Dr. Willoughby moved that the Secretary send an invitation to Dr. Chandler to join the G. C. M. S. Motion seconded and discussed.

Dr. Winchester moved that the motion be laid on the table. Motion supported and passed.

Dr. H. J. Vandenberg gave a talk on "Gall Bladder Disease." Discussion followed. Meeting adjourned.

President Benson in the chair. Due to the absence of the Secretary reading of the minutes of the previous meeting was omitted. Dr. H. Cook chairman of the legislative committee reported on the medical practice act bill. Reciprocity was discussed by Dr. Malfroid.

Dr. F. C. S. Battley of Port Huron gave a talk on "Hemorrhagic Diseases of the New Born." Discussion followed.

Meeting adjourned.

President Benson in the chair. Business portion of the program dispensed with. Dr. E. S. Gurdjian department of surgery of the University of Michigan spoke on "Fractures of the Spine and Associated Nerve Injury."

Discussion by Doctors Manwaring and Curry. Meeting adjourned.

G. C. Curry, Secretary, Pro-Tem.

OCEANA COUNTY

Officers for 1929: President, Dr. A. R. Hayton, Shelby; Secretary, Dr. J. D. Buskirk, Shelby; Delegate, Dr. J. H. Nicholson, Hart.

BERRIEN COUNTY

The Berrien County Society held their January meeting in the Hotel Whitcomb at St. Joseph on Wednesday evening the 23rd.

Owing to the poor condition of the roads only about 25 were in attendance at the dinner and meeting.

The new president, Dr. H. O. Westervelt of Benton Harbor took the chair. A new collection system and credit rating bureau were proposed to the members. This to be known as The Berrien County Medical Society Collection Agency and operated as a subsidiary to a local well established collection agency.

It was moved and supported that the President and Secretary be appointed as a committee to arrange terms and establish this unit as a Society activity.

A discussion of the new professional qualifications act was brought up and it was urged by the Secretary that those who had petitions send them in as soon as possible.

The petition of Dr. Ingleright of Niles for transference of membership from the O. M. C. O. R. O. to the Berrien County Society was read and passed to the membership committee for action.

The President then announced his committee appointments for the year as follows:

Executive—Dr. L. M. Rutz, Niles; Dr. W. A. Smith, Berrien Springs; Dr. H. A. Schwendener, St. Joseph.

Membership—Dr. N. A. Herring, Niles; Dr. J. F. Ames, Niles; Dr. C. W. Merritt, St. Joseph.

Program—Dr. J. C. Strayer, Buchanan; Dr. A. W. Corey, New Troy; Dr. James Muir, New Buffalo.

Legislative—Dr. B. D. Giddings, Niles; Dr. H. S. Kling, Niles; Dr. C. V. Spawr, Benton Harbor.

Grievance—Dr. A. A. Rosenberry, Benton Har-

XUM

bor; Dr. F. W. Brown, Watervliet; Dr. F. W. Tonkin, Niles.

Tuberculosis—Dr. C. N. Sowers, Benton Harbor; Dr. C. A. Mitchell, Benton Harbor.

The speaker of the evening was then introduced Dr. Don Griswold, deputy commissioner of public health from the state board of health at Lansing.

Dr. Griswold's topic was the new County Health Unit. He approached his subject with a brief history of the State Board of Health, its organization, work accomplished and the aims of the present head Dr. Kiefer. From this he told of the spread of county health units throughout the country and the plan as mapped out for Michigan and the induction of the system in new counties.

Following Dr. Griswold's talk a general and interesting discussion of the plan took place.

Its workability under our local conditions, possible conflicts of administration, eventual control and policies under a new administration.

All of which Dr. Griswold carefully explained as much as possible.

No action was taken by the Society in regards to approval or disapproval of the project, the matter being carried over to the next meeting.

W. C. Ellet, Secretary.

SAINT CLAIR COUNTY

A regular meeting of this Society was held at the Hotel Harrington, Port, Huron, Michigan, Thursday, January 24, 1929.

Supper was served to twelve members and two guests at 6:30 p. m., after which the meeting was called to order by the President at 8 p. m., with the following members present; Doctors Smith, H. O. Brush, Ryerson, Caster, Lane, Morris, Vroman, Webster, Waltz, Waters, Bovee, Wellman, Attridge, Windham and Kesl. As visitors: Doctors A. Dale Kirk of Flint and J. B. Porter of Port Huron.

The Society was informed of the death of Dr. G. S. Ney, a veteran of the profession of Saint Clair County and one of the honorable members of the Society. The Society instructed the President to write an expression of sympathy to the family of our late associate and to attend the funeral services in a body. The President was further instructed by motion, made and supported, that a floral blanket was to be sent to the funeral parlors as an expression of the high esteem and affection of the membership of the Society.

The President was instructed by the Society to seek another place of meeting for the future if the same could be had with satisfactory conditions and food.

The President then introduced the guest of the evening, Dr. A. Dale Kirk of Flint whose subject was, "Practical Problems in Obstetrics and Gynecology." It is regretted the President cannot give the entire record of the evening inasmuch as the remarks of Dr. Kirk were so interesting and instructive. However, mention may be made of some of the high spots of the subject under discussion. The speaker stressed, and quoted statistics to support his view, the necessity and practicality of prenatal history and examination, touching upon several of the more important items both in history taking and the physical examination of the expectant mother. Pelvimetry, particularly of the measurement of the diagonal conjugate and the interischial diameters, was held to be of some importance and the essayist defined the three common types of pelves met in obstetrical work in this locality as those of the rachitic, the flat and the funnel types. The speaker also covered vomiting and the toxemia of pregnancy in a very practical manner and made some very good suggestions with regard to treatment thereof. "Nearly every case of vomiting," said Dr. Kirk, "begins as a neurosis and unless relieved ends in a true toxic condition by reason of the vicious circle set up thereby." Psychic treatment in many cases, if instituted early, will relieve many cases according to Dr. Kirk. "Abdominal support if began early, by some support lifting upward from the symphysis, will in most cases relieve or prevent the backache so frequently complained of in gestation," said the speaker. The tendency is for the patient to throw her shoulders backward and this flexion of the spine places the line of weight bearing at a point posterior to the heel instead of where it is normally. Suspension of all clothing, even to the supports of hose, should be from the shoulders, according to Dr. Kirk. He believes this care and suggestion to be very much appreciated by the patient.

Under the subject of gynecology, Dr. Kirk, touched upon misplacements of the uterus and quoted a national authority in support of the view that backache and neurosis did not arise therefrom. He also attacked the use of repeated curretage for menstrual irregularity and also stressed the need of more physical exercise for young girls who are so often wont to undertake the daily school routine without any provision for the same.

The entire membership of the Society took part in the discussion and many queries were made of the speaker with regard to the use of twilight sleep, forceps application, management of the diet in toxemia of pregnancy, treatment for hairlip, episiotomy, etc. The speaker closed the subject in the usual manner endeavoring to reply to all queries in so far as possible. In conclusion the President thanked Dr. Kirk for coming over and giving the Society such an interesting evening, expressing the hope that the visit could be repeated in the future. Meeting adjourned at 10 p. m.

George M. Kesl, President.

ATTEMPT TO USE FLU VACCINE UNSUCCESSFUL

An attempt to have the influenza vaccine prepared by Dr. Edward C. Rosenow of the Mayo Clinic used by the U. S. Army, Navy or Public Health Service has so far been unsuccessful.

At the recent conference on influenza held here by the Public Health Service, the Rosenow vaccine was discussed. The majority of physicians and health officers present did not view Dr. Rosenow's vaccine favorably.

The vaccine is made from organisms or germs associated with influenza, but as no one knows what organism causes flu, the use of this vaccine is considered by many to be a hit in the dark. The organisms of which the vaccine is made may or may not include the one which causes influenza. Dr. James J. Hogan, who himself presented at the conference a method of treating influenza, is supporting the Rosenow vaccine and is at present trying to get some organization to give it a trial. If some investigator working independently with the vaccine had successful results it would be evidence in favor of the vaccine's potency.—Science Service.

XUM

THE DOCTOR'S LIBRARY

Offering Suggestions and Recommendations

HISTORY OF MEDICINE—With medical chronology, suggestions for study and bibliographic data, by Fielding H. Garrison, M. D., Lt., Colonel, Medical Corps, U. S. Army, Surgeon-General's Office, Washington, D. C. Fourth edition, revised and enlarged. Octavo of 996 pages, with 286 portraits and other illustrations. W. B. Saunders Company, Philadelphia and London, 1929. Cloth, $12.00 net.

"For the medical student and practitioner the study of the history of his profession dealing as it does with all aspects of human culture, affords one of the best outlets for ideation and is one of the best offsets to the mental staleness and ennui which result from narrow specialism and infatuation with a single idea." This quotation from Garrison's new book is especially significant at this time. Since the last edition of this work seven years ago the importance of medical history has been recognized by some of the leading medical institutions of the United States, notably Johns Hopkins University, the Mayo Foundation, the University of Wisconsin as well as medical history societies, which have been formed in some of the leading cities. Probably at no other period has the study of medical history assumed such proportions as at present. The fourth edition of Garrison includes a new section on prehistoric medicine which is based on the work of a number of paleopathologists who have examined over 350 specimens of skeletal and cranial remains discovered during the past 75 years. Not only have prehistoric bones been studied for cave gout, osteomyelitis, osteitis as well as other pathological conditions, but the art of paleolithic times has also been found to have a medical significance. Mention is made of a lime stone statuette about four and a half inches high of a paleolithic woman which indicated endocrine obesity. Trephining is mentioned as one of the earliest surgical operations.

Medical history as here given is conveniently divided into periods. Following the prehistoric we have Egyptian medicine, Sumerian and Oriental medicine, Greek and Greco-Roman medicine, from 460 B. C. to 576 A. D. The Byzantine period (476-732 A. D.) The Mohammedan and Jewish periods (732-1096 A. D.) The medieval period (1096-1438 A. D.) The Renaissance (1453-1600), then by centuries to the present. A new chapter is added dealing with medicine in the world war and afterward.

Of special interest are the sections on Cultural and Social aspects of modern Medicine and Medicine in the World's War and After. The former section of 40 pages, much of it in fine type, discusses phases of medicine that concern every physician today; the latter deals with the development of medicine that has grown out of the necessities of the war as well as the present day tendency towards socialization of medicine. Much original work has been done and many discoveries have been made during the past 15 years and here Garrison mentions the work associated with names of women: Maude Slye (cancer), Florence Sabin (hematology), Alice Hamilton (industrial medicine), Gladys Dick (scarletina), Martha Wolstein (serology), May Swartz Rose (food chemistry). 125 pages of the work devoted to appendicies contain valuable information for ready reference, a chronology of medicine and public hygiene; hints on the study of medical history, bibliographic notes and questions and exercises. The work is fully illustrated by photographs and the author has maintained the biographic detail which has been an interesting feature of former editions of this work.

HANDBOOK OF MICROSCOPICAL TECHNIC FOR WORKERS IN BOTH ANIMAL AND PLANT TISSUES—Edited by C. E. McClung. Contributors: Wm. H. F. Addison, Ezra Allen, J. L. Appleton, Jr., Robert Chambers, Wm. V. Cone, Harold J. Conn, E. V. Cowdry, Ulric Dahlgren, Hal Downey, Sophia H. Eckerson, N. C. Foot, R. T. Hance, C. H. Heuser, Raphael Isaacs, F. B. Mallory, C. E. McClung, Josephine W. McNabb, Frederic Parker, Jr., Wilder Penfield, Florence R. Sabin, P. G. Shipley, Ethel M. Slider, W. R. Taylor, and D. H. Wenrich. 495 pp. 43 illus. Paul B. Hoeber, Inc., New York, 1929. Price, $8.00.

Since the middle of the last century biologists have endeavored to study the cell and its contents through the application of methods of preservation and artificial staining of dead cells. Countless methods have been devised and these have from time to time been collected in manuals of microscopical technic. The current books on technic are in large part compendiums of technical procedure dating from years back, old and new technics intermingled.

The present work differs from these in being critically prepared. It emphasizes the technical methods that predominate in modern research while methods that have been supplanted or are no longer used are given little or no space.

Introductory attention is given the general methods of preparing microscopic slides. There are special sections dealing predominately with methods involving microdissection and vital and supravital stains for the study of living material. Cytological, embryological and histological methods and technic for the preparation of bacteria, protozoa and botanical materials are amply treated. Formulae and descriptions of reagents and material likewise are given in some detail.

Twenty-four contributors, all active investigators in cell research, give the work the impress of authority. The format is the same as in the recent Special Cytology by the same publisher. The book is illustrated by pertinent figures.

THE MEDICAL CLINICS OF NORTH AMERICA—(Issued serially, one number every other month.) Volume 12, No. 4. (Philadelphia Number, January 1929). Octavo of 297 pages with 30 illustrations. Per Clinic year, July, 1928 to May, 1929. Paper, $12.00; Cloth, $16.00 net. W. B. Saunders Company, Philadelphia and London, 1929.

The opening chapter of this volume includes Clinic of Dr. Thomas McCrae on "The Early Diagnosis of Empyema in Lobar Pneumonia." This is a very important subject considering the time of year. The volume is so well supplied with clinical papers by men of note that it is almost difficult to choose from its contents. Among the contributors, however, Dr. Martin E. Rehfuss writes on "Hyperacidity." Dr. Henry K. Mohler deals with the subject of "Tachycardia and Hyperthyroidism," Dr. Hartmann on Hypoglycemia and Dr. David A. Cooper on "Primary Carcinoma of the Lung." This is a random selection from 28 chapters that comprise the volume.

XUM